5/4/2009. DIALOG SEARCH 09/838133

Connecting via Winsock to Dialog

Logging in to Dialog

Trying 31060000009998...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
****
ENTER PASSWORD:
****
Welcome to DIALOG

Dialog level 05.24.00D

Last logoff: 20apr09 11:25:59
Logon file405 04may09 11:43:30
*** ANNOUNCEMENTS ***
***
*** FREE FILE OF THE MONTH (May) ABI/INFORM(File 15)
Each month Dialog offers an opportunity to try out new or
unfamiliar sources by offering $100 of free searching (either
DialUnits or connect time) in one specific file. Output and
Alerts charges are not included. For more details visit:
http://www.dialog.com/freefile/ and then take a moment to get
familiar with another great Dialog resource.

*** "Thomson File Histories" are now available directly through Dialog
in selected patent and trademark files. Combined with the
comprehensive patent and trademark information on Dialog, file
histories give you the most complete view of a patent or trademark
and its history in one place. When searching in one of the patent
and trademark databases, a link to an online order form is displayed
in your search results, saving you time in obtaining the file
histories you need. See HELP FILEHIST for more information about
how to use the link and a list of files that contain the link.
NEW FILE
***

RESUMED UPDATING
***File 523, D&B European Financial Records
***

RELOADS COMPLETED
***Files 154&155, MEDLINE(R)
***File 669, TRADEMARKSCAN(R) - Japan
***File 678, TRADEMARKSCAN(R) - Norway
***
FILES RENAMED
***File 321, PLASPEC now known as Plastic Properties Database
***
FILES REMOVED
***File 301, CHEMNAME - please use File 398 ChemSearch
***File 388, PEDS: Defense Program Summaries
***File 588, DMS-FI Contract Awards

>>>For the latest news about Dialog products, services, content<<<
>>>and events, please visit What's New from Dialog at <<<
>>>http://www.dialog.com/whatsnew/. You can find news about <<<
>>>a specific database by entering HELP NEWS <file number>. <<<
YTEXT is set ON as an alias for 15,16,148,160,275,621
KTEXT is set ON as an alias for 9,20,476,610,613,624,634,636,810,813
MTEXT is set ON as an alias for 2,35,65,77,99,233,256,278,474,475,583
STEXT is set ON as an alias for 623,473,47,635,570,PAPERSMJ,PAPERSEU
HTEXT is set ON as an alias for 625,268,626,267,139
FTEXT1 is set ON as an alias for 15,9,275,621,636,16,160,148
FTEXT2 is set ON as an alias for 610,810,476,624,634,20,47
BIB1 is set ON as an alias for 35,139,583,65,2,144,233,474,475,99
SUB26 is set ON as an alias for PAPERSEU, PAPERSMJ,570,635
SUB35 is set ON as an alias for 625,268,626,267,608
* * *
SYSTEM:HOME
Cost is in DialUnits
Menu System II: D2 version 1.8.0 term=ASCII
*** DIALOG HOMEBASE(SM) Main Menu ***

Information:
1. Announcements (new files, reloads, etc.)
2. Database, Rates, & Command Descriptions
3. Help in Choosing Databases for Your Topic
4. Customer Services (telephone assistance, training, seminars, etc.)
5. Product Descriptions

Connections:
6. DIALOG(R) Document Delivery
7. Data Star(R)

/H = Help /L = Logoff /NOMENU = Command Mode

Enter an option number to view information or to connect to an online service. Enter a BEGIN command plus a file number to search a database (e.g., B1 for ERIC).
? b 410

```
     04may09 11:43:30 User264721 Session D72.1
          $0.00    0.283 DialUnits FileHomeBase
     $0.00  Estimated cost FileHomeBase
     $0.00  Estimated cost this search
     $0.00  Estimated total session cost   0.283 DialUnits

File 410:Dialog Customer Newsletters 2008
     (c) 2009 Dialog. All rts. reserv.

     Set  Items  Description
     ---  -----  -----------
? set hi %%%;set hi %%%
HILIGHT set on as ''
HILIGHT set on as ''
? b YTEXT, KTEXT, MTEXT,  STEXT, HTEXT, ftext1, ftext2, bib1, sub26, sub35
>>>        476 does not exist
>>>         77 does not exist
>>>        233 does not exist
>>>        473 does not exist
>>>4 of the specified files are not available
     04may09 11:43:46 User264721 Session D72.2
          $0.00    0.115 DialUnits File410
     $0.00  Estimated cost File410
     $0.06  TELNET
     $0.06  Estimated cost this search
     $0.06  Estimated total session cost   0.398 DialUnits

SYSTEM:OS  - DIALOG OneSearch
  File  15:ABI/Inform(R) 1971-2009/May 02
        (c) 2009 ProQuest Info&Learning
  File  16:Gale Group PROMT(R) 1990-2009/Apr 13
        (c) 2009 Gale/Cengage
*File  16: UD/banner does not reflect last processed date
  File 148:Gale Group Trade & Industry DB 1976-2009/Apr 17
        (c) 2009 Gale/Cengage
*File 148: The CURRENT feature is not working in File 148.
See HELP NEWS148.
  File 160:Gale Group PROMT(R) 1972-1989
```

(c) 1999 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2009/Apr 08
(c) 2009 Gale/Cengage
File 621:Gale Group New Prod.Annou.(R) 1985-2009/Mar 30
(c) 2009 Gale/Cengage
File 9:Business & Industry(R) Jul/1994-2009/Apr 30
(c) 2009 Gale/Cengage
File 20:Dialog Global Reporter 1997-2009/May 04
(c) 2009 Dialog
File 610:Business Wire 1999-2009/May 04
(c) 2009 Business Wire.
*File 610: File 610 now contains data from 3/99 forward.
Archive data (1986-2/99) is available in File 810.
File 613:PR Newswire 1999-2009/May 04
(c) 2009 PR Newswire Association Inc
*File 613: File 613 now contains data from 5/99 forward.
Archive data (1987-4/99) is available in File 813.
File 624:McGraw-Hill Publications 1985-2009/May 04
(c) 2009 McGraw-Hill Co. Inc
File 634:San Jose Mercury Jun 1985-2009/May 01
(c) 2009 San Jose Mercury News
File 636:Gale Group Newsletter DB(TM) 1987-2009/Apr 13
(c) 2009 Gale/Cengage
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 2:INSPEC 1898-2009/AprW3
(c)2009 Institution of Engineering & Technology
File 35:Dissertation Abs Online 1861-2009/Mar
(c) 2009 ProQuest Info&Learning
File 65:Inside Conferences 1993-2009/Apr 29
(c) 2009 BLDSC all rts. reserv.
File 99:Wilson Appl. Sci & Tech Abs 1983-2009/Feb
(c) 2009 The HW Wilson Co.
File 256:TecInfoSource 82-2009/Feb
(c) 2009 Info.Sources Inc
File 278:Ei Compendex(R) 1970-2009/Apr W3
(c) 2009 Elsevier Eng. Info. Inc.
File 474:New York Times Abs 1969-2009/May 03
(c) 2009 The New York Times
File 475:Wall Street Journal Abs 1973-2009/May 04
(c) 2009 The New York Times
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
(c) 2002 Gale/Cengage
*File 583: This file is no longer updating as of 12-13-2002.

File 623:Business Week 1985-2009/May 01
(c) 2009 The McGraw-Hill Companies Inc
File 47:Gale Group Magazine DB(TM) 1959-2009/Apr 22
(c) 2009 Gale/Cengage
File 635:Business Dateline(R) 1985-2009/May 04
(c) 2009 ProQuest Info&Learning
File 570:Gale Group MARS(R) 1984-2009/Apr 10
(c) 2009 Gale/Cengage
File 387:The Denver Post 1994-2009/May 01
(c) 2009 Denver Post
File 471:New York Times Fulltext 1980-2009/Apr 30
(c) 2009 The New York Times
File 492:Arizona Repub/Phoenix Gaz 19862002/Jan 06
(c) 2002 Phoenix Newspapers
*File 492: File 492 is closed (no longer updating). Use Newsroom, Files 989 and 990, for current records.
File 494:St LouisPost-Dispatch 1988-2009/May 03
(c) 2009 St Louis Post-Dispatch
File 631:Boston Globe 1980-2009/May 04
(c) 2009 Boston Globe
File 633:Phil.Inquirer 1983-2009/May 03
(c) 2009 Philadelphia Newspapers Inc
File 638:Newsday/New York Newsday 1987-2009/May 03
(c) 2009 Newsday Inc.
File 640:San Francisco Chronicle 1988-2009/May 03
(c) 2009 Chronicle Publ. Co.
File 641:Rocky Mountain News Jun 1989-2009/Jan 16
(c) 2009 Scripps Howard News
*File 641: This file has ceased updating
File 702:Miami Herald 1983-2009/May 03
(c) 2009 The Miami Herald Publishing Co.
File 703:USA Today 1989-2009/May 01
(c) 2009 USA Today
File 704:(Portland)The Oregonian 1989-2009/May 03
(c) 2009 The Oregonian
File 713:Atlanta J/Const. 1989-2009/Mar 08
(c) 2009 Atlanta Newspapers
File 714:(Baltimore) The Sun 1990-2009/Apr 29
(c) 2009 Baltimore Sun
File 715:Christian Sci.Mon. 1989-2009/Apr 21
(c) 2009 Christian Science Monitor
File 725:(Cleveland)Plain Dealer Aug 1991-2009/May 01
(c) 2009 The Plain Dealer
File 735:St. Petersburg Times 1989- 2009/May 01
(c) 2009 St. Petersburg Times
File 477:Irish Times 1999-2009/May 04

(c) 2009 Irish Times
File 710:Times/Sun.Times(London) Jun 1988-2009/May 03
(c) 2009 Times Newspapers
File 711:Independent(London) Sep 1988-2006/Dec 12
(c) 2006 Newspaper Publ. PLC
*File 711: This file does not update. See NewsRoom for full
daily coverage from many European sources.
File 756:Daily/Sunday Telegraph 2000-2009/May 04
(c) 2009 Telegraph Group
File 757:Mirror Publications/Independent Newspapers 2000-2009/May 03
(c) 2009
File 625:American Banker Publications 1981-2008/Jun 26
(c) 2008 American Banker
*File 625: This file no longer updates.
Use Newsroom Files 989 and 990 for current records.
File 268:Banking Info Source 1981-2009/Apr W4
(c) 2009 ProQuest Info&Learning
File 626:Bond Buyer Full Text 1981-2008/Jul 07
(c) 2008 Bond Buyer
*File 626: This file no longer updates.
Use Newsroom Files 989 and 990 for current records.
File 267:Finance & Banking Newsletters 2008/Sep 29
(c) 2008 Dialog
File 139:EconLit 1969-2009/Apr
(c) 2009 American Economic Association
File 144:Pascal 1973-2009/Apr W4
(c) 2009 INIST/CNRS
File 608:MCT Information Svc. 1992-2009/May 04
(c) 2009 MCT Information Svc.

Set Items Description
--- ----- -----------
? s ((creat??? or giv??? or generat??? or assign??? or porvid???) (5n) ((part or product or item) (2n) (identifier or number or SKU or code))) (s) (ordering or ordered or sourcing or sourced or quoting or quoted or offering or offered) (s) ((item or material) and process)
Processing
Processing
Processing
Processing
Processing
Processing
Processing
Processing
Processed 10 of 57 files ...
Processing
Processing

```
Processed  20 of  57 files ...
Processing
Processed  30 of  57 files ...
Processing
Processed  40 of  57 files ...
Processing
Processed  50 of  57 files ...
Processing
Processing
Completed processing all files
      23267291  CREAT???
      36529617  GIV???
      15819866  GENERAT???
       2089334  ASSIGN???
           204  PORVID???
      28706851  PART
      24504016  PRODUCT
       1805211  ITEM
         72545  IDENTIFIER
      28029329  NUMBER
         53958  SKU
       4532774  CODE
        885996  ORDERING
       2916927  ORDERED
        471555  SOURCING
        310512  SOURCED
        357630  QUOTING
       1682732  QUOTED
       9602366  OFFERING
       7547712  OFFERED
       1805211  ITEM
       8474025  MATERIAL
      17515497  PROCESS
     S1     44  ((CREAT??? OR GIV??? OR GENERAT??? OR ASSIGN??? OR
                PORVID???) (5N) ((PART OR PRODUCT OR ITEM) (2N)
                (IDENTIFIER OR NUMBER OR SKU OR CODE))) (S) (ORDERING OR
                ORDERED OR SOURCING OR SOURCED OR QUOTING OR QUOTED
OR
                OFFERING OR OFFERED) (S) ((ITEM OR MATERIAL) AND PROCESS)
? rd s1

>>>Duplicate detection is not supported for File 625.

>>>Duplicate detection is not supported for File 626.

>>>Records from unsupported files will be retained in the RD set.
```

S2 36 RD S1 (unique items)
? s s2 and pd<2001
Processing
Processing
Processing
Processing
Processed 10 of 57 files ...
Processing
Processing
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
Processing
Processed 20 of 57 files ...
Processing
Processing
Processed 30 of 57 files ...
Processing
Processing
Processed 40 of 57 files ...
Processing
Processed 50 of 57 files ...
Processing
Completed processing all files
36 S2
99958232 PD<2001
S3 15 S2 AND PD<2001
? t s3/3,k/1-15

3/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02394351 115720295
Something for nothing? Employees' views of occupational pension schemes
Loretto, Wendy; White, Phil; Duncan, Colin
Employee Relations v22n3 PP: 260 2000
ISSN: 0142-5455 JRNL CODE: EMP
WORD COUNT: 4511

...TEXT: to elicit information about job choice more generally. Therefore, in addition to all the benefits offered by Finserv, the list included general factors such as salary, job security etc. Respondents were asked to assign a number to each item, the numbers ranging from 1 indicating that they considered that item to be essential to their job choice, to 6, indicating the complete irrelevance of that...
000101

3/3,K/2 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02006818 52089905
Why all the buzz on branding?
Orr, Alicia
Target Marketing v23n4 PP: 5 Apr 2000
ISSN: 0889-5333 JRNL CODE: ZIR
WORD COUNT: 453

...TEXT: taking my name.

Then, after she asked for my other items, and after I had given one more item number, she said, "Ms. Suman [my other name] let me confirm that your address is still...

...d like to pay again with my Discover Card (as I had when I last ordered a month or so ago) . I said yes. She replied that she just needed the...

...my card number and the expiration date for confirmation, and we were done. The entire ordering process took 60 seconds! So easy. So pleasant. Service with a smile could well be their...
000401

3/3,K/3 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01359153 00-10140
Get it right
Turbide, David A
Manufacturing Systems v14n9 PP: 84-90 Sep 1996
ISSN: 0748-948X JRNL CODE: MFS
WORD COUNT: 1929

...TEXT: engineering review.

Without a configurator in the picture, there are two ways to identify the ordered product in the enterprise resources planning (ERP) system: 1) create a unique part number (item master) for each
unique variation of the product, or 2) somehow manage to build and...

960900

3/3,K/4 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00715313 93-64534
Lotus Notes databases: The foundation of a virtual library
Liberman, Kristen; Rich, Jane L
Database v16n3 PP: 33-46 Jun 1993
ISSN: 0162-4105 JRNL CODE: DTB
WORD COUNT: 7250

...TEXT: time. A few useful features were added to the catalog record; when cataloging a new item, the accession number was automatically generated, the present date automatically showed up in the date cataloged field, and a filter was...

...keywords and put them in a keyword field. The medium and publication type fields each offered a list of choices and would not accept anything not on the list.

As IRG...
930600

3/3,K/5 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00618928 92-34030
Compliance: No Exception for Government Contractors
Peiffer, Frank G.
Journal of Accountancy v173n6 PP: 94-100 Jun 1992
ISSN: 0021-8448 JRNL CODE: JAC
WORD COUNT: 2753

...TEXT: Others (including national accounts).

Among other things, the DSMD form requires disclosing the highest discount offered each customer class on any product or model within a particular special item number (SIN). A SIN is given by the GSA to designate specific product categories on a schedule. For example, SIN 476...
920600

3/3,K/6 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

07705360 Supplier Number: 63857033 (USE FORMAT 7 FOR FULLTEXT)
Adopt a new code of conduct.(Technology Information)
Bicknell, David
Computer Weekly, p18
July 27, 2000
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Professional
Word Count: 652

... systems have so far been very expensive to develop, and take around a year to create, and for each new item code it takes on average 90 minutes to assign a code. That sort of timescale might prove incompatible with the oft-quoted promise "our e-marketplace will be up and running in three months".

UN/SPSC has...
20000727

3/3,K/7 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

01139184 Supplier Number: 41290026 (USE FORMAT 7 FOR FULLTEXT)
YOU HAVE TO REDESIGN TO TAKE ADVANTAGE OF E.P.C. PROCESS
Metalworking News, p19A
April 23, 1990
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Tabloid; Trade
Word Count: 2934

... producing aluminum castings. The actual costs and/or casting results will vary substantially for any given project. The complexity of the part, the number of cores (or pulls in a die), and the engineering requirements for the part will...

...method has few, if any, cases where the same part has been produced or even quoted for production in all four methods. An effort has been made to provide composite charts...

...been adjusted to provide a comparison that we believe to be fairly

representative of each process.
Green sand casting is expected to produce the worst surface finish, while die casting is...
19900423

3/3,K/8 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

10293741 SUPPLIER NUMBER: 20858200 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Reviews on what's new in CAD/CAM and NC. (Software Review)(Evaluation)
Tooling & Production, v64, n3, p51(3)
June, 1998
DOCUMENT TYPE: Evaluation ISSN: 0040-9243 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 1161 LINE COUNT: 00097

... a software development tool for those users electing to modify or expand Euclid 3 by creating custom code.
Product modeling of complex objects is an area of strength for Euclid 3. The system currently...

19980600

3/3,K/9 (Item 2 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

07302759 SUPPLIER NUMBER: 15523593 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Software buyers' guide. (Buyers Guide)
Purchasing, v116, n8, p41(5)
May 19, 1994
DOCUMENT TYPE: Buyers Guide ISSN: 0033-4448 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 6047 LINE COUNT: 00519

... and close a PO, and print receivers. The fifth module is MATERIAL ANALYSIS. You can generate overdue, expedite, project summary, part number analysis, cash requirements, and supplier summary reports. The sixth module is a UTILITIES module that...

19940519

3/3,K/10 (Item 3 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06757539 SUPPLIER NUMBER: 14561416 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Software for purchasing. (Office Products & Business Systems) (Buyers Guide)
Purchasing, v115, n6, p49(6)
Oct 21, 1993
DOCUMENT TYPE: Buyers Guide ISSN: 0033-4448 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 6688 LINE COUNT: 00572

... a PO; and print receivers. The fifth module is MATERIAL ANALYSIS. It allows users to generate overdue, expedite, project summary, part number analysis, cash requirements, and supplier summary reports. The sixth module is a UTILITIES module which...

19931021

3/3,K/11 (Item 4 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06466152 SUPPLIER NUMBER: 13790778 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Lotus Notes databases: the foundation of a virtual library. (Lotus Development Corp.'s Lotus Notes)
Liberman, Kristen; Rich, Jane L.
Database, v16, n3, p33(12)
June, 1993
DOCUMENT TYPE: Cover Story ISSN: 0162-4105 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 7477 LINE COUNT: 00615

... keywords and put them in a keyword field. The medium and publication type fields each offered a list of choices and would not accept anything not on the list.

As IRG...

19930600

3/3,K/12 (Item 5 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06220443 SUPPLIER NUMBER: 12786465 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Buyer's guide to software for purchasing. (Special Section: Office Products & Business Systems) (Buyers Guide)
Purchasing, v113, n1, p83(6)
July 16, 1992
DOCUMENT TYPE: Buyers Guide ISSN: 0033-4448 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 7008 LINE COUNT: 00606

... complete, and close a PO; and print receivers. The fifth module is Material Analysis to generate overdue, expedite, project summary, part number analysis, cash requirements, and supplier summary reports. The sixth module is a Utilities module which

19920716

3/3,K/13 (Item 6 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

04597727 SUPPLIER NUMBER: 09047051 (USE FORMAT 7 OR 9 FOR FULL TEXT)
You have to redesign to take advantage of E.P.C. process. (Evaporative Pattern Casting) (Casting World Supplement)
Troxler, John A., Jr.
Metalworking News, v17, n782, p19A(4)
April 23, 1990
ISSN: 0891-4036 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 3083 LINE COUNT: 00249

... method has few, if any, cases where the same part has been produced or even quoted for production in all four methods. An effort has been made to provide composite charts of each process.

Green sand casting is expected to produce the worst surface finish, while die casting is...

19900423

3/3,K/14 (Item 1 from file: 47)
DIALOG(R)File 47:Gale Group Magazine DB(TM)

05003483 SUPPLIER NUMBER: 19829574 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Options for acquisitions and serials control automation in libraries. (part 1, Advanced Computer Concepts Inc.'s Pathways to Endeavor Information Systems Voyager) (Software Review)(Evaluation)
Boss, Richard W.
Library Technology Reports, v33, n4, p403(48)
July-August, 1997
DOCUMENT TYPE: Evaluation ISSN: 0024-2586 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 14292 LINE COUNT: 01225

... of several items on a single purchase order becomes tedious. It is common, therefore, to assign a separate order number to each item ordered (many of these separate orders may be combined and mailed to the vendor in a...

19970717

3/3,K/15 (Item 2 from file: 47)
DIALOG(R)File 47:Gale Group Magazine DB(TM)

04456837 SUPPLIER NUMBER: 18077119 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Acquisitions.(Technical Services Functionality in Integrated Library Systems)
Boss, Richard W.
Library Technology Reports, v31, n6, p659(53)
Nov-Dec, 1995
ISSN: 0024-2586 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 10875 LINE COUNT: 00914

... of several items on a single purchase order becomes tedious. It is common, therefore, to assign a separate order number to each item ordered (many of these separate orders may be combined and mailed to the vendor in a...

19951121
? t s3/7,k/1-3

3/7,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02394351 115720295
Something for nothing? Employees' views of occupational pension schemes
Loretto, Wendy; White, Phil; Duncan, Colin
Employee Relations v22n3 PP: 260 2000 CODEN: EMREDQ ISSN: 0142-5455
JRNL CODE: EMP
DOC TYPE: Periodical; Feature LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 4511

ABSTRACT: Against a background of partial, and often contradictory, information, Loretto explores the attitudes of over 1,000 employees in one firm in the financial services sector towards various issues related to retirement and pensions. The respondents regarded the existence of the occupational pension schemes as having a major influence on their job searches. Among the various reasons for being members of the employer's scheme, the principal ones were associated with the perceived qualities of the scheme itself, the zero charge for employees, and opportunities for planning for the future. Levels of ignorance about certain features of the scheme were discernible, and differentiated patterns of response among groupings of employees bring to pensions matters diverse expectations and awareness. Loretto concludes with a discussion of the implications of these findings for employee recruitment, motivation and retention.
TEXT: Wendy Loretto, Phil White and Colin Duncan: The University of Edinburgh, UK

ACKNOWLEDGMENT: The authors would like to thank the staff of Finserv for their assistance with this project. Special thanks are due to Aileen Deas, Fiona Lawson and Deborah Proctor. The assistance provided by Jake Ansell, Andy Adams and Katharine Angus is also gratefully acknowledged.

Introduction

As is attested by this special issue, the inter-related topics of retirement and pensions have received increasing attention in the UK in recent years. Although occupational pension schemes are only one of the three prime sources of income for retired people in the UK, it is argued that they merit particular attention for several reasons. First, the coverage of occupational pension schemes, provided by employers, is widespread: from the late 1960s until the early 1990s, the proportion of employees who were members of an occupational scheme varied between 48 per cent and 53 per cent (Pensions Provision Group (PPG), 1998), a coverage that could be said to be even more worthy of note given that employers have been under no statutory obligation to provide schemes for their employees.

While personal pensions have gained some currency over recent years - according to one measure, well over 5 million people have a personal pension arrangement (PPG, 1998) - around 46 per cent of employees remain members of occupational schemes (PPG, 1998). Moreover the third source of retirement income, the State Old Age Pension, first introduced in 1908, has for the past two decades been on an ineluctably downward path, both in this country and elsewhere (Boldrin et al., 1999).

Second, the provision of occupation pensions represents a significant cost to employers. According to a recent review of benefits provision surveys, benefit expenditure (of which pensions represent a significant proportion) can sometimes approach 50 per cent of an organisation's salary costs (Thompson, 2000, p. 5). More specifically to pensions, a survey of 82 occupational schemes found average employer contributions ranging between 5 per cent and 15 per cent of employee's salary (Terry and White, 1998, p. 22).

Third, despite their comprehensive coverage, and the cost they represent to employers, our information on attitudes towards such schemes is partial, rather than comprehensive. Moreover, it is heavily focused on employers' motives and beliefs surrounding occupational pension schemes: our grasp of employees' attitudes is tenuous. This article sets out to address this gap by considering the attitudes and perceptions of some 1,100 employees in a national financial services enterprise. However, before the findings are reported and then discussed, it is worth paying some attention to what we do know about employers' and employees' views towards occupational pensions.

Occupational pension schemes - employers' views

Casey's (1993) survey of 33 firms elicited a range of employers' motives for having pension schemes. The ability to retain employees (the "retention function") was held by respondents to be weaker than the "recruitment function". With regard to the former, most employers in Casey's survey saw schemes as likely to encourage only older, long service employees to stay (Casey, 1993, p. 6). In their survey of 88 employers, Terry and White (1997, p. 168) also discovered that employers had strong beliefs that pension schemes had a recruitment role to play but, in addition, it emerged that these beliefs were not supported by any hard empirical evidence obtained by employers. Another study, conducted by Taylor and Earnshaw (1995), uncovered different motives. While acknowledging that questionnaire results cannot conclusively demonstrate the reason for the existence of schemes, the authors did detect some patterns of belief among the 66 employers from whom they obtained responses. Above all, the authors found that the primary objective of company schemes was the retention of staff (Taylor and Earnshaw, 1995, p. 45).

Occupational pension schemes - employees' views

Although employers' perspectives are somewhat contradictory, we do have some data. On the other hand, we have fewer data on employees' views. One exception is the Goode Committee evidence. Under its remit of reviewing the framework of law and regulation relating to pension schemes, the Committee collected information from 6,123 adults in 1992-1993 about their attitudes towards pensions. A major advantage in the minds of respondents was that employers contribute to (and hence could be said to "subsidise") occupational pension funds; a major perceived disadvantage was that pension entitlement might be lost in changing jobs (Department of Social Security, 1993, pp. 43-9). The Committee concluded, however, that in general employees appeared to know very little and that, for most, lack of knowledge stemmed from lack of interest (Department of Social Security, 1993, p. 172).

Notwithstanding this dearth of evidence, one might expect, a priori, that pension schemes would fulfil a variety of objectives, for employers and employees alike, not least as a means of attracting employees to an organisation and promoting their retention. The mere availability of a scheme could be said to send a powerful signal to would-be employees of the preparedness of an employer to invest resources in a pension scheme on behalf of employees.

Quite apart from the contribution to the funds, an employer has to put in place an elaborate apparatus to persuade, inform and advise employees on a whole range of pensions issues. The employees, also, have to be engaged in this process, if only to receive information from employers about the state of the scheme, or changes to its rules and conditions.

In other ways, too, the existence of a scheme might serve to attract people to an enterprise: by prompting those who would normally discount the future to think again; by offering a promise of some sort of security for oneself and one's dependants in later years; by making for the employees certain decisions about complex financial matters that, otherwise, the employees would have difficulty making for themselves; by offering a scheme not necessarily matched by certain other employers; and, somewhat paradoxically for the recruitment process, enabling people to build up pension entitlements that are nowadays relatively portable, should they later choose to go elsewhere. All of these attributes are likely to be enhanced where the employer provides a non-contributory scheme, which does not require any direct contribution from the employees' own salaries.
However, apart from the scant research evidence about the role of pension schemes in the eyes of employers and employees, we have in the past lacked the data to enable us to verify the force of our a priori reasonings.

Moreover, there is other evidence that seems to view the effectiveness of pension schemes in particular, and benefit provision more generally, in a more jaundiced light. The recent Industrial Relations Services benefit survey was unambiguous in its viewpoint:"Put simply, much of the Pounds 50 billion spent on benefits each year by UK companies is being squandered because employees' appreciation, awareness and understanding of benefits are so limited (Thompson, 2000, p. 5)."

Towers Perrin's annual benefit effectiveness index collects information from both managers and employees from 18 large UK companies. The conclusion from their latest survey (1999) was that only a minority of staff and managers "saw benefits as an important reason why employees joined and stayed with their organisation". Similarly only one-fifth of the managers believed that benefits help motivate "desired behaviours" (Thompson, 2000, p. 6).

In the light of this background of confusing and partial data, the authors decided to survey employees on a variety of issues related to pensions and retirement, including their perceptions of occupational pension schemes.

Methodology

In January 2000, a postal questionnaire survey was conducted of 2,000 employees of Finserv[1], a national financial services organisation with its headquarters in Scotland. Finserv employs 9,000 staff in the UK, 7,000 of whom are located at headquarters. The research was carried out in close collaboration with Finserv's business change team, indicating that the issues to be examined were of some strategic significance to the organisation. Respondents were sampled randomly by computer from payroll records and Finserv disseminated the questionnaires through the internal mail system, together with covering letters from the authors and from a senior HR manager. These letters explained the purpose of the survey and carried the usual guarantees of anonymity and confidentiality. Reply-paid envelopes, addressed directly to the first author, were also supplied, further enhancing these guarantees. It is postulated that, in combination, these measures served to enhance the response rate - 1,129 questionnaires from across the UK were returned. Only one was uncompleted, but an accompanying note indicated that the respondent had left Finserv, and so did not think it appropriate to participate in the survey. The 1,128 usable questionnaires represented a highly satisfactory, 55 per cent response rate. To meet Finserv's wishes, no follow-up letters were issued, and no records of who had been included in the sample were made available to the authors. Therefore, we have no way of knowing if those who chose not to participate differed in any way from those who completed and returned questionnaires. Nevertheless, a comparison of the profile of the respondents to Finserv's employee profile reveals that our sample closely matched in terms of gender and basis of employment. Full details of these

breakdowns are given in Table I, together with the age profile of our sample. The significant differences between the age profiles of males and females ($p < 0.05$) are taken account of in the analyses which follow.

Results

A very high proportion of respondents (84 per cent; n = 951) indicated that they had given some thought to the issue of their retirement income or pension. Women were less likely than men (83 per cent compared to 87 per cent; $p < 0.05$) to have given attention to this matter, and there was a difference, particularly marked among men, to be observed with age. Only 76 per cent of males aged between 16 and 29 claimed to have thought about their retirement income, compared to 96 per cent of males aged 50 and over ($p < 0.001$).

The vast majority of respondents were members of Finserv's occupational pension scheme. Overall 90 per cent (n = 1,010) of respondents were members. Once again, however, there were significant differences between the ages and genders of respondents. Females in the youngest age group, i.e. those aged between 16 and 29, were least likely to be members of the company's occupational pensions scheme. Full details of the patterns of membership are given in Table II.

Not surprisingly, those who had given some thought to their own retirement were also more likely, independently of gender and age, to be members of their company's pension scheme ($p < 0.001$).

Attractiveness of occupational pensions in recruitment

To measure this, employees were asked to rank a number of factors which have influenced or are likely to influence their job choice. This question did not refer to employment at Finserv explicitly, but instead aimed to elicit information about job choice more generally. Therefore, in addition to all the benefits offered by Finserv, the list included general factors such as salary, job security etc. Respondents were asked to assign a number to each item, the numbers ranging from 1 indicating that they considered that item to be essential to their job choice, to 6, indicating the complete irrelevance of that aspect of employment. The full list of items and their overall rankings is presented in Table III.

In summary, the availability of occupational pensions was a big draw to the employees participating in this survey; their rankings placed it fifth out of 20 items. As can be seen from Table III, this position was well above all other aspects of the benefits package. The next most popular benefits were maternity and paternity provisions (ranked ninth), and relocation

package (ranked 11th). The perceived importance attached to the provision of an occupational pension is supported by the high proportion of employees (82 per cent) who rated it as essential or very important in their search for jobs. Notwithstanding this importance, the findings also show that occupational pensions were less attractive than factors such as annual review of salary, job security, competitive salary and opportunities for training.

The relative importance of pensions varied little between men and women or between employees of varying ages. Nevertheless, those employees who claimed to have given thought to their pensions were significantly more likely to rate the availability of an occupational pension as essential or very important ($p < 0.001$), as were those who were members of Finserv's scheme ($p < 0.001$). Such responses support the internal reliability and validity of the results.

Reasons for scheme membership

Responses were received from 91 per cent of respondents who were members of Finserv's scheme. The question allowed for open response, the answers received being categorised by the authors. Subsequent to appropriate inter-rater reliability checks, the answers were divided into four categories, details of which are to be found in Table IV.

Overall, the most popular reasons for becoming a member of the occupational pension scheme were inherent to the scheme itself, most notably that it is a non-contributory scheme. One-quarter of all responses explicitly referred to this feature, providing answers in the following vein:

- "the company is currently paying for my retirement";

- "free benefit!";

- "to provide benefits at pension age at no cost to me";

- "it's a free pension!";

- "it's a non-contributory scheme, so there's nothing to lose";
- "it is a final salary, non-contributory scheme - employer bears all costs - you would need to be mad not to join";

- "something for nothing".

The other most popular responses either also focused on the attractiveness of the scheme itself - "it's a good scheme" was a common response - or referred to the need to provide income for future security: "To help maintain as nearly as possible my standard of living after retirement, and

give me independence". A total of 80 responses noted that the pension was available as part of Finserv's benefits package: "an exceptionally generous benefit"; while around 50 individuals claimed they had been advised to join the pension scheme. The responses in the first three categories were overwhelmingly positive. In contrast, those in Category 4 could be said to be at best neutral, at worst negative. One respondent even hinted regret at joining the scheme, claiming that they had been "young at the time".

Further analysis of the responses at category level revealed that men were more likely to give responses relating to the pension scheme itself (Category 1), whilst women were more likely to provide reasons related to future security (Category 2) ($p < 0.05$). Moreover, for both genders, those under the age of 40 were more likely than their older peers to choose Category 1 reasons, while those aged 40 and over stated reasons which were neutral and passive (Category 4) ($p < 0.01$). Two of the most frequently mentioned responses in Category 4 were "It's a condition of employment" and "It's automatic". Therefore it is perhaps to be expected that older employees who were more likely to have been employed by Finserv when membership of occupational pension schemes was compulsory - age and length of service were positively associated: $r = 0.52$; $p < 0.001$ - would be the most likely to give this type of response. However, responses in Category 4 might just as easily indicate a degree of apathy in attitudes towards pensions. Evidence for this latter assertion can be drawn from the finding that, while those employees who had given thought to their retirement were most likely to provide positive, Category 1 answers, Category 4 was much more popular among those who said they had not thought about pensions ($p < 0.01$).

Reasons for non-membership of scheme

As with scheme membership, 91 per cent of those who had not joined Finserv's scheme provided justifications for their position. The two most common reasons related to rules of the scheme: either the respondents were not old enough to join the scheme or they were on a temporary contract. The full distribution of responses is provided in Table V.
Closer examination of those employees who claimed not to be old enough to join the scheme revealed that all but two were under 20 years of age - the lower threshold for membership of Finserv's occupational pension scheme.

Awareness of employer contributions

Given the widespread recognition that one of the most significant attributes of Finserv's occupation scheme is that it does not require any employee contributions, a high awareness of the level of employer contributions could have been expected. However, this proved not to be the case. The responses elicited from scheme members relating to the amount of

employer contributions ranged from 0 per cent to 21 per cent of salary. The most common figure mentioned was 15 per cent; this was given by 68 employees. Most members ($n = 619$; 61 per cent of members) did admit that they had no idea as to the level of employer contributions. In addition, 74 individuals opted not to answer the question, many writing in "it's a final salary scheme, so the amount varies ..." Such responses revealed a shaky comprehension of certain basic pensions matters.

Further analysis revealed that those groups less likely to have offered a figure and instead to say they had no idea were: females of all ages ($p < 0.001$), males aged 20-29 ($p < 0.001$), and females who had given neutral or passive reasons for becoming members of the pension scheme ($p < 0.05$). Full details are provided in Table VI.

Furthermore, in relation to the attractiveness of pensions in job choice, it was shown that the likelihood of estimating a figure for employer's contribution was highest amongst those who rated pensions as essential, and lowest amongst those who indicated that availability of occupational pensions would not be of paramount importance in their choice of job ($p < 0.05$).

Discussion of results and conclusions

While it was mentioned earlier in this article that the fieldwork has only recently been completed, some very interesting findings have already emerged. It is clear that the bulk of respondents had given at least some thought to retirement and pensions, although it is to be noted that younger men were especially inclined to discount the future.

Among the many factors that contributed to this apparent pattern of future orientation, it could be suggested that a prime one is the nature of the financial products which the employer, and therefore the employees, market, develop and administer on a daily basis. Of course, the issues are bound to go deeper than that. For instance, it is interesting to speculate whether a company such as Finserv attracts people with certain predispositions, or whether employees develop these in their jobs and careers. Similarly, the pattern of causation is unclear in the relationship between giving thought to the future, and scheme membership: are the retirement-focused people more likely to be members, or does membership begin to "concentrate the mind"?

The high degree of importance that the respondents attached to pensions schemes as a factor in job choice is - we would contend - a highly significant research finding. It seems to vindicate the expensive pensions policies of firms such as Finserv. Hitherto, as was shown in our review of the research literature, the evidence accumulated tended to be uncertain.

The differentiated pattern of responses to our various questions in terms of such characteristics as age, or gender, point to different degrees of salience of pensions as a factor in "employment choice" among different types of employee. This finding may be of particular interest to employers seeking to use a pension scheme as a targeted recruitment device. At present, schemes seem to be used rather indiscriminately, giving rise to the allegations of "squandering" that were noted earlier in this article. The apparent attraction of a scheme in terms of job search has also to be tempered by the observation that the question was couched in general terms, in relation to both (a) scheme, and (any) employer. Accordingly, the respondents were not necessarily commenting specifically on Finserv's scheme.

The force of that caveat is diminished, however, by the sizeable number who rated the scheme as at least "good". Some of the people could have had in mind other employers' schemes that they knew, or knew about: Finserv's scheme might have been considered to be the best of a not very good bunch, although it does appear to be the case that non-contributory schemes tend to be a feature of the financial services sector. Contributory or not, the tenor of many responses extolled the scheme's virtues in glowing terms. Two examples speak well for the many: "One of the reasons for joining Finserv - excellent!" "Because it is the best and we are very lucky to have it."

In these circumstances, it is remarkable to observe that Finserv does not specify in its scheme booklet the contribution that it made on employees' behalf to the fund, even though by all objective measures (such as non-contributory basis, death-in-service benefits, final salary with a denominator of 60ths) the employer's scheme is, indeed, a very good one. There may well have been some sound practical reasons for this omission (the rate has to be reviewed every three years, for example), but that very omission may well have contributed to a feeling of indifference on the part of many respondents.

It must be stressed, as many of the respondents were most anxious to point out, that scheme membership was "free". Allowing for the fact that there is probably no such thing as a free pension, the fact that Finserv was the sole contributor to the fund on the employees' behalf was clearly most attractive to employees. Nevertheless, there was an extremely widespread lack of awareness amongst employees of what that "free benefit" meant to them in quantifiable terms.

Turning now to motivation and retention, the relatively large number of passively inclined respondents tends to detract from the remarkable statistic of 90 per cent membership, which is even more worthy of note if we observe that the vast bulk of the non-members were excluded by the

Finserv membership criteria (minimum age of 20, and permanent contract) rather than by self-exclusion from choice. Perhaps, too, we are observing a (Herzbergian) phenomenon noted by earlier research. There may be some degree of ambivalence towards pension schemes among employees, but employees would most certainly express great resentment were a scheme to be withdrawn (Terry and White, 1997, pp. 171, 174). This might help to throw light on a recently reported research finding that it is rare to find the outright closure of schemes, without replacement (Forth and Millward, 1999).

Over certain matters, two groups gave sufficiently distinct sets of responses to warrant further reflection: women as a whole, and older men. The women's relative ignorance of the employer's contribution rate has resonance in other studies of personal finance, where differences in behaviour and attitudes between men and women have been noted (Pahl, 1989). That the older employees at Finserv were apparently more grudging, treating membership as automatic, or even compulsory, harks back to the pre-1986 situation, when the law enabled employers to specify scheme membership as a condition of employment. Certain corollaries seem to flow from the fact that older employees had had no alternative but to join. Older workers' responses seemed to suggest that the perceived value of the schemes was dulled: people who feel compelled are likely to be more grudging. Moreover, the employer-employee relationship may well be cooler in such a situation. An employer who presents employees with "Hobson's choice" (no opportunity to opt out of the scheme, or no offer of a sum of money equivalent to the employer's pension contribution), may be regarded as domineering. This has obvious implications for those who are devising flexible benefit schemes. These observations centrally concern the changing statutory environment, under which the current Labour Government is planning to revert to the pre-1986 situation. In the light of this, might not many employees come to resent the proposed compulsion, and intrusion into those financial matters which people regard as intensely private (Aldridge, 1998, p. 8), or is the proposed scope for more alternatives (occupational schemes, or stakeholder, and/or personal) likely to attenuate these resentments?

Despite these imponderables, one thing is clear: our respondents are building up pension entitlement: the general secretary of the TUC is only one among many who has stressed the importance of building up, very early on in one's career, up to 40 years of entitlement for an adequate pension (Monks, 1999). Of course, the respondents to this survey have been enabled to benefit from a very attractive scheme, but the future for schemes in general is much more uncertain. For example, IDS has referred to a "pervasive theory", which claims that "occupational schemes are part of the old world of large corporations and long-term careers and certainly nothing to do with young, dynamic companies or with motivating staff" (Income Data Services, 1999, p. 19). That in turn prompts the question: what factors

help to influence and inform contemporary employees' decisions about provisions for retirement? We hope to begin to unravel these processes through further analysis of the Finserv data.

Note

This pseudonym has been used throughout to meet the company's wish for anonymity.

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Caption: Table I.; Details of sample; Table II.; Membership of Finserv's occupational pension scheme by gender and age; Table III.; Relative importance attached to factors influencing job choice; Table IV.; Reasons for becoming a member of Finserv's occupational pension scheme; Table V.; Reasons for not joining Finserv's occupational pension scheme; Table VI.; Awareness of levels of employer's contribution to pension scheme

...TEXT: to elicit information about job choice more generally. Therefore, in addition to all the benefits offered by Finserv, the list included general factors such as salary, job security etc. Respondents were asked to assign a number to each item, the numbers ranging from 1 indicating that they considered that item to be essential to their job choice, to 6, indicating the complete irrelevance of that...
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3/7,K/2 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

02006818 52089905
Why all the buzz on branding?
Orr, Alicia
Target Marketing v23n4 PP: 5 Apr 2000 ISSN: 0889-5333 JRNL CODE: ZIR
DOC TYPE: Periodical; Editorial LANGUAGE: English RECORD TYPE: Fulltext
LENGTH: 1 Pages WORD COUNT: 453

ABSTRACT: An editorial discusses the recent emphasis on brand marketing.

TEXT: THIS TIME LAST YEAR the editorial team here at Target Marketing was busy planning the 2000 Editorial Calendar, and on the table for discussion was whether we should plan to do a story focused on the subject of brand marketing.

Why brand? Well, at the time, it seemed that while Internet marketing was everywhere with new books, magazines and events popping up almost every day to tell people and companies how to get their piece of the online pie,

brand marketing was also getting its share of the buzz. Even a traditional direct marketing event, the Chicago Association of Direct Marketing's annual conference, was based on the theme, "Brand Advertising that Works." The Internet was and still is one of the driving forces behind all the interest in brand marketing. All the new companies jumping online wanted to know how to develop instant brand recognition. Established marketers who were now shifting some of their business to the Web needed to know how to transfer their brand equity over as well. Think of all the Internet ads on television and in publications touting their new e-brands.

But read on. Brand is more than logos, names and fancy ad campaigns. For instance, the relationship between brand and service is one that certainly has a bottom-line impact for direct marketers. As Bob Hacker writes in the cover story, ' Nothing will kill your brand faster than poorly executed telemarketing, fulfillment or sales follow up."

Good service defines the brand experience

L.L. Bean never ceases to amaze me. I called the cataloger last night to place an order. It was about 10 p.m.; I was already sitting in bed. When the TSR answered, I almost felt as if she were expecting my call! Yes, I've ordered from them before, but the representative who answered asked me for my first item number right away-no fooling around with finding a code on the back of the catalog first or taking my name.
Then, after she asked for my other items, and after I had given one more item number, she said, "Ms. Suman [my other name] let me confirm that your address is still 1034 ..."And then she inquired as to whether I'd like to pay again with my Discover Card (as I had when I last ordered a month or so ago) . I said yes. She replied that she just needed the last four digits of my card number and the expiration date for confirmation, and we were done. The entire ordering process took 60 seconds! So easy. So pleasant. Service with a smile could well be their motto. It's certainly an integral part of the L.L. Bean brand image.

BY ALICIA ORR

EDITOR IN CHIEF

...TEXT: taking my name.

Then, after she asked for my other items, and after I had given one more item number, she said, "Ms. Suman [my other name] let me confirm that your address is still...

...d like to pay again with my Discover Card (as I had when I last ordered a month or so ago) . I said yes. She replied that she just needed the...

...my card number and the expiration date for confirmation, and we were done. The entire ordering process took 60 seconds! So easy. So pleasant. Service with a smile could well be their...
000401

3/7,K/3 (Item 3 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01359153 00-10140
Get it right
Turbide, David A
Manufacturing Systems v14n9 PP: 84-90 Sep 1996 CODEN: MASYES ISSN: 0748-948X JRNL CODE: MFS
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WORD COUNT: 1929

ABSTRACT: Configuration software is designed to address difficulties in correctly specifying products that are either not completely pre-defined or products with many options or combinations. These types of situations are generally within the assembly-to-order, make-to-order, and engineer-to-order business segments. A configurator is computer software that supports both the engineering and the sales-order processing portions of the business by managing the specifications for a product to be sold and built. Most configurators can furnish price and cost information immediately and accurately, while ensuring error-free bills and routing without engineering review. Configurators are available in a wide range of capabilities and prices, employing different approaches and technologies. Some ERP vendors offer configurator modules to go with their enterprise software suites. Newer configurators use expert systems and artificial intelligence engines. Manufacturers find the costs are easily justifiable.

TEXT: Headnote:

Configuration software helps users quickly and accurately meet customer requirements

THE CUSTOMER CALL starts out like any other... Customer (CUS): "Hi. I'd like to order a model 12JX-387."

Customer Service Rep (CSR): "Yes, sir. Can I have your name and customer

number, please?" After collecting the appropriate information, the CSR asks, "Now, that was a model 12JX-387, right?"

CUS: "That's right. Only the flange has to be two inches wide instead of the one-inch flange that was on the one I bought last time."

CSR: "OK, but that makes it a model 22JX-387."

CUS: "Whatever. And I also need a threaded mounting hole on the top of the unit and I want the optional side bracket."
CSR: "Hmmm." (sound of shuffling papers) "Let's see," (more shuffling) "the mounting hole on top changes the model number to 22JX-412 and the bracket makes it a 22JX-412/B 17 unless you want the bracket on the right side....

After collecting the necessary information, the order-taking process is completed and the result is passed to engineering for review. Later, it is discovered that the right-side bracket interferes with the two-inch flange, making the ordered product impossible to manufacture. Someone must now call the customer back and negotiate an acceptable alternative. The error may have been discovered during engineering review of the order, a customary step in many companies, and one that introduces significant delays in responding to customer requests. Otherwise, the error probably would have been detected during manufacturing, with possible scrap and/or rework costs in addition to the delays. Neither choice is very attractive.

Configuration software is designed to address difficulties in correctly specifying products that are either not completely pre-defined or products with many options or combinations. These type situations are generally within the assembleto-order (ATO), make-to-order, and engineer-to-order business segments.

A configurator is computer software that supports both the engineering and the sales-order processing portions of the business by managing the specifications of a product to be sold and built. Typically, the configurator will establish a dialog with the sales orderentry operator to ask pertinent questions and, based on the answers, will create a unique bill of material and routing for the product. In addition, most configurators can furnish price and cost information immediately and accurately, while ensuring error-free bills and routings without engineering review.

Without a configurator in the picture, there are two ways to identify the ordered product in the enterprise resources planning (ERP) system: 1) create a unique part number (item master) for each unique variation of the product, or 2) somehow manage to build and sell each variation without a unique identity. The latter option may be

addressed through either a descriptive technique or the use of a "features and options" facility. If unique part numbers are required, they can be pre-defined, or created during or after receipt of the customer order (see Figure 1).

Creating item numbers

Imagine a company that makes dimensioned products such as draperies or custom cabinets. Because each product is truly unique, it is impractical to try to pre-define each possible combination of length and width, color, trim, etc. A part number can be created for product types, such as velvet drapes or oak wall cabinets. This generic item number is used on the customer order with attached extensive text that describes what the customer requested and instructions for manufacturing. The problem with not having a definitive part number in the system, of course, is that there is nothing to refer to when planning materials and resources, no ability to develop standard costs or price lists, and no product definition to use for production control, material consumption, and actual costing. Instead, manufacturing uses the text as instructions to use materials and build the product. Despite the limitations, descriptive configuration has been used in many companies as the only practical way to manage the business.

On the other hand, for ATO manufacturers, the traditional solution is a form of features-and-options (F/O) facility. F/O is a primitive configurator in which the choices (options) within each category (feature) are pre-defined in a "modular" bill of material (see Figure 2). As with the descriptive approach, there is only a single generic part number for any and all variations of the product. However, the modular bill does provide a vehicle for planning.
The good news is that most ERP systems feature an F/O facility as part of the basic package functionality. F/O does have its limits, however. Most F/O systems are only usable in a true ATO environment where major assemblies are stocked and assembled to the finished product after receipt of the customer order. Most F/O facilities can't handle multiple-level assembly and few can recognize dependencies between selections-e.g., with 12-inch wheels you must get the 6- or 8-horsepower motor and heavy-duty brakes. Other typical F/O system restrictions may include the following:

a single routing for all variations;

an inability to identify the configuration of a finished product in stock;

limitations in the number of features in a product and/or the number of options allowed under a given feature; limited or nonexistent product identification (for warranty tracking);

limited or nonexistent demand history (for sales analysis and forecasting);

limited access to past order configurations (for quick reordering);

an inability to handle blanket orders (multiple shipments); and
an inability to specify variations not defined as options (special requirements beyond the designated options selections).

On a positive note, F/O does not create unique item masters and bills for each variation-which would otherwise clutter the engineering database-and F/O usually leads to a quick, efficient order handling and assembly methodology.

Unique item numbers and bills

Every possible or likely combination of choices for a product can be predefined as an unique item with its own bill and routing.

Even given a manageable number of combinations, unique identification-often accomplished through the use of "intelligent" part numbers-adds to the engineering burden prior to product release and results in a large number of product definitions that must be stored and maintained. In addition, order-handling personnel must be able to locate the right part number when writing the sales order. On the plus side, each configuration is engineering-approved, has a defined cost and price, and is order-ready.

If there are too many combinations to make pre-definition practical, new items can be created on an as-needed basis. A major problem with this practice is that order handlers must be able to readily identify those combinations that already exist-not a trivial task. Once it has been determined that the ordered item is indeed a new configuration, nearly all ERP systems require the item to be added to the database before it can appear on the sales order. Once defined, the configuration must be reviewed by engineering or at least a knowledgeable individual to ensure that the requested product is manufacturable, functional, and meets the company's and the customer's requirements. This configuration review process not only adds to the turn-around time, but it also ties up engineering talent that could be used to work on new products. And, it isn't foolproof. It's still possible for mistakes to occur and not be discovered until sometime during the manufacturing process or, worse, discovered by the customer.

Beyond bills of material

Configuration software users strive to address these problems with an "intelligent" system that administers the product-definition process while the order is being entered, ensuring accuracy and saving time and money.

The configurator does this by means of a model that incorporates all of the engineering knowledge and instructions necessary to define the bills of material and routing while staying within necessary design constraints. Furthermore, advanced configurators can "translate" customer or product functional requirements into product contents. For example, users could ask their customers "How much weight will the go-cart be carrying?" and "How fast do you want to go?" instead of "What size wheels?" and "How much horsepower?"

A configurator is similar to the F/O approach in that it does not create a unique item definition in the system's engineering database. It does, however, retain configuration data in its own files for historical and reference purposes, and also allows recall for reordering purposes.

Types of configurators

Configurators are available in a wide range of capabilities and prices, employing different approaches and technologies. Some ERP vendors offer configurator modules to go with their enterprise software suites. In addition, there are a number of independent configurator software vendors.

Some configurators offered by ERP vendors are really enhanced F/O facilities that employ a top-down approach to configuration. Within these systems, the product family structure is predefined through something akin to the F/O modular bill. The configuration process assists in the selection of options within the pre-defined bill of possibilities. There's nothing wrong with this approach if the product choices are simple enough to be defined in the modular bill. These topdown configurators offer more flexibility than the F/O approach. Many of them also handle some situations F/O can't accommodate, such as multiple level configurations and interdependencies between choices.

At the high end of the configurator scale are bottom-up systems that create the bill of material from a collection of parts based on responses to the dialog questions. Bottom-up systems are able to handle more difficult configuration tasks, including dimensioned products and the functional dialog mentioned earlier.

Older configurator designs and some of the more limited offerings use traditional "If-Then" programming logic. This methodology may satisfy the requirements of limited applications but it tends to be difficult for users to understand and maintain as products and markets change. Logic rules get complex and convoluted as the number of choices and their interdependencies increase. In fact, many companies that developed their own configuration software-using traditional programming logic-at some time in the past are now replacing those custom-built configurators with a packaged configurator

product, often primarily to increase ease-of-use.
Newer configurators use "expert systems" and "artificial intelligence" engines that allow the configuration model to be stated in terms of rules (traditional "If-Then" logic) plus constraints and resource definitions that are applied during the configuration process by the "inference engine" (the configurator logic.) In this way, the configurator is taught about the environment and application of the future products and given guidelines as to how to configure the components to comply with the product's intended use.

These so-called "knowledge-based" configurators must encompass product design and engineering knowledge, which complicates their implementation and ease-of-use. Configurators vary considerably in the ease-of-use category but no matter what the user interface looks like, the definition of the configuration "model" is the difficult part. In fact, some of the configurator vendors derive more than half of their revenue from implementation services, which is an indication of where the effort is applied. Oddly, the engineering department usually doesn't resist sharing its secrets with the configuration software. Rather than thinking they are being replaced, engineers tend to recognize that they are being relieved of the burdensome task of order review so they can concentrate on more value-adding activities like product design.
Benefits

Configurators can be expensive, ranging in price from twenty thousand dollars to more than a million dollars, plus implementation services and effort. Many manufacturers find the costs are easily justifiable, not only by cost savings but also by new business opportunities that can be addressed through increased flexibility and responsiveness to customer requests. Industry trends toward mass customization and ever smaller niche markets also are giving the configurator market a boost. Not only does configuration help satisfy the customer's requirements, but it does so quickly, providing immediate and accurate costs and pricing, as well as assuring product definitions are buildable and functional.

...TEXT: engineering review.

Without a configurator in the picture, there are two ways to identify the ordered product in the enterprise resources planning (ERP) system: 1) create a unique part number (item master) for each unique variation of the product, or 2) somehow manage to build and...
960900
?
PLEASE ENTER A COMMAND OR BE LOGGED OFF IN 5 MINUTES

? t s3/7,k/4

3/7,K/4 (Item 4 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

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Lotus Notes databases: The foundation of a virtual library
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ABSTRACT: With the wide availability of information sources in electronic format and new communication technologies that facilitate information dissemination, libraries have new opportunities for accessing and distributing an ever-expanding array of information. In addition, new methods of information retrieval are simplifying search methods and improving the precision and recall of search results. The virtual library, an innovative approach to information management, extends the resources of a local library by providing access to bibliographic data, full text, images, and other information that exists in electronic format. Lotus Development Corp.'s Information Resources Group's background as a traditional corporate information service is discussed, and the factors that led to the transition to a virtual library using Lotus Notes are outlined. Some of the information applications being developed on Lotus Notes in other corporations are also discussed.
TEXT: The future enters into us, in order to transform itself in us, long before it happens. --Letters to a Young Poet, Rainer Maria Rilke, translated by M.D. Herter Norton

The convergence of communications, electronic imaging and other information technology with the proliferation of electronic information is changing the way libraries and information specialists do business. With the wide availability of information sources in electronic format including full text of serial publications, conference papers and dissertations, television and radio broadcast transcripts, newspapers, wire services and more; and with new communication technologies that facilitate information dissemination, libraries large and small have new opportunities for accessing and distributing an ever-expanding array of information. There is, as one vendor likes to call it, an "electronic ocean" of information.
In addition, new methods of information retrieval are simplifying search methods and improving the precision and recall of search results. The information landscape is becoming increasingly multidimensional with the addition of multimedia formats. New and innovative approaches are already redefining the way information specialists retrieve, organize and

disseminate information. One of these innovations is the virtual library.

THE VIRTUAL LIBRARY

The virtual library extends the resources of a local library by providing access to bibliographic data, full text, images, and other information that exist in electronic format. A virtual library can integrate internal and external information resources (i.e., with those of information providers, database services, other libraries, etc.). A corporate library, for example, might contain a relatively small yet highly focused collection of traditional print information sources, but might be able to access virtually any information electronically from other libraries and information systems. This article describes the experience of one corporate library that transformed a traditional paper-based information service to one that is built around a virtual library. The virtual library serves as the main resource from which both clients and information specialists extract critical business and technical information.

In the article, we will discuss Lotus Development Corporation's Information Resources Group's (IRG) background as a traditional corporate information service and talk about the factors that led to the transition to a virtual library using Lotus Notes. This will include early efforts to deliver electronic information services, the development of various local databases, and the information applications currently provided. We will mention some of the information applications being developed on Lotus Notes in other corporations. Finally, we will discuss IRG's plans for future enhancements of the virtual library.

THE LOTUS INFORMATION RESOURCES GROUP

Since its beginnings as the Lotus Library in 1983, Lotus' Information Resources Group has been constantly reinventing itself as new technology in information retrieval and dissemination appear. The Lotus Library began as a traditional corporate library soon after Lotus was founded in 1982. In its early days it consisted of a collection of books on Lotus products, programming languages, marketing, and the microcomputer software and hardware industry; a magazine collection of computer industry titles; and topical and company clipping files. At that time, Lotus consisted of about 100 employees. In 1984, a second "library," the Technical Resource Center, was started consisting of a software collection, public access Macs and PCs, magazines, technical reports, and ACM and IEEE proceedings. The Resource Center also developed a series of seminars open to the entire Lotus community that showcased both internal and external speakers. The Library catered mostly to the marketing and sales departments while the Resource Center supported Lotus' developer community. Both offered research services, including online searching and document retrieval.

DEC's Vaxmail, Lotus' earliest e-mail system, provided the first chance for the Library to distribute information electronically to the Lotus community. Two very popular e-mail services, Micro Notes and Industry Newswires, were begun in 1984 and 1986 respectively. Industry Newswires was a daily news service consisting of press releases and news stories about the computer industry pulled from BusinessWire, PR Newswire, and Dow Jones News/Retrieval and redistributed over e-mail (individual agreements for redistribution rights were set up with each information provider). Micro Notes was a weekly in-house newsletter, originally paper-based, written by a Library staff member, that tracked Lotus and its competitors in the industry press. Hardcopy of each article cited in Micro Notes was available in the Library.

In 1986, Lotus' director of marketing suggested that Newswires and Micro Notes also be distributed (and archived) on Lotus Notes, a product then under development. The Library staff worked with the Lotus Notes team to develop these two databases and the Library's use of Lotus Notes was begun. Because so few Lotus employees were using Lotus Notes at that time, the e-mail distribution of Newswires and Micro Notes prevailed and the Library continued to look for new ways to disseminate its information electronically. In 1988, the Library and the Resource Center merged to become the Information Resources Group.
In 1989, employees in Lotus' field sales offices began asking for access to the Library's electronic information services and the idea of an IRG CD-ROM was born. The same information stored in Lotus Notes databases also began to be stored in a BlueFish database. BlueFish is text retrieval software developed at Lotus (used until recently by Ziff's Computer Select CD-ROM product) and was available for use by Lotus employees. Since Lotus is also a provider of CD-ROMs, the Lotus One Source series, the equipment needed to master a CD-ROM was also available. The CD-ROM initially consisted of Industry Newswires and Micro Notes and later editions held databases from other Lotus groups as well. It was updated quarterly and sent to a mailing list of about 250 interested Lotus employees, mostly in the field. It was issued about six times and was very popular. The BlueFish database itself was also available on the IRG Novell server (although not everyone at Lotus could access Novell) and the CD-ROM was available in the Resource Center. Each method of dissemination, Lotus Notes and BlueFish, filled a gap left by the other; BlueFish provided the full-text searching that Lotus Notes did not, while the Lotus Notes databases were available to both Novell and 3Com users.

Early in 1990, IRG moved into new library and office space. IRG at that time consisted of four service groups: research services, application services, education services, and the Resource Center. Research services managed the secondary market research materials and responded to requests for research. Education services ran five seminar series, having expanded

on the original series started in 1985. The Resource Center staff ran the physical library, including staffing a circulation desk and managing the book, software, and magazine collections. Applications services designed, implemented, and maintained electronic information services. The IRG services were extremely well used and the electronic services gained popularity as the company grew to about 4,000 employees worldwide. IRG was now receiving daily transmissions via MCI Mail of relevant industry news from INDIVIDUAL, Inc.'s First! service, eliminating the need for daily searching of online databases by the IRG staff. The Industry Newswires from INDIVIDUAL, Inc. were being e-mailed to about 800 people daily and Micro Notes was e-mailed to about 1,500 people weekly using Express, a Lotus e-mail product. The same information was being reformatted and stored in a BlueFish database accessible to those able to access the IRG Novell server and the IRG CD-ROM was being produced quarterly. The same information was also being imported into separate Lotus Notes databases.

Users found the information contained in the various databases very useful but were often confused by the different ways in which to access it. Not only were we providing Industry Newswires and Micro Notes on three different platforms, we also asked users to use a DataTrek system to access our resource center catalog and provided ABI/INFORM, COMPENDEX, One Source, and Computer Select on CD-ROM, all of which used a different interface. It became increasingly difficult to describe IRG's suite of electronic services in a way that users were able to differentiate among them and use them effectively. The applications services staff was aware of the confusion but didn't know how to standardize its electronic services on one platform. The problem was solved in late 1990 when Lotus decided to standardize its e-mail and database delivery, corporate-wide, on Lotus Notes.

THE GREAT 1991 NOTES @LOTUS ROLLOUT

Lotus Notes is workgroup applications software that allows people to access, track, and organize information. It had shipped in late 1989 but was not yet being used by all Lotus employees; many did not have the appropriate hardware or training. The Lotus Information Services and Support department declared 1991 as the year of "Notes @Lotus" and began to upgrade every workstation to needed specifications, to load Microsoft Windows and Lotus Notes on each upgraded workstation, and to provide Lotus Notes training. With the company standardized on the Lotus Notes platform, IRG began to evaluate all its electronic services in light of their suitability for dissemination through Lotus Notes.

During 1991, e-mail distribution of both Industry Newswires and Micro Notes was phased out. E-mail subscribers were strongly encouraged to start accessing the services through Lotus Notes and new e-mail subscribers were discouraged. By late summer, when most Lotus employees were on Lotus Notes,

the e-mail services were stopped entirely. The last IRG CD-ROM was issued in 1991, since most field offices were also on Lotus Notes.

With the groundwork in place, IRG, begun as a traditional corporate library, was ready for the transition to a virtual library. Today the group is focused on meeting the information needs of a diverse and geographically dispersed clientele. Of prime importance is the timeliness, accuracy, accessibility and cost-effectiveness of information and, equally important, the expected medium for information delivery is electronic.

LOTUS NOTES: THE IDEAL PLATFORM

The IRG Virtual Library is an array of network-based information applications available twenty-four hours a day at the client's desktop. It offers access to full-text information on companies, competitors, products aid technologies, industry news, market data and analyses, and trade and business press. The Virtual Library enables information sharing across the enterprise, allows the client to customize his/her own desktop "library" to meet personal information needs, and makes it easy for IRG's clients to do their own research. The underlying development platform of the Virtual Library is Lotus Notes. Because Lotus Notes allows organization of information by categories, it is consistent with the way information specialists and end-users search for information. And, with the introduction of full-text retrieval functionality, Lotus Notes is a well-suited choice for an electronic library.

LOTUS NOTES PRIMER

A discussion of some of the intrinsic features of Lotus Notes will provide a better understanding of the IRG applications to be described later. Also, since workgroup software is new, the following will provide insight into the way such software promotes productivity. Lotus Notes has a number of features that together, form a unique database development environment. These features include:

* text handling;

* information integration;

* standard database interface;
* simultaneous user access to databases;

* multisite access to identical data; and

* integrated electronic mail.

Lotus Notes documents can contain large amounts of text, which can be structured as required by the application. Lotus Notes also handles compound documents, integrating graphics, text, images, sound, video and other multimedia formats that will become more commonplace in the future. Many different file formats can be easily imported into Lotus Notes. Although individual database designs may differ, there is a single user interface that unifies access to all databases. Lotus Notes databases can reside on local area (or even wide area) network servers rather than individual PCs so many users can access the same database at the same time. A Lotus Notes feature called replication allows Lotus Notes databases in different locations (i.e., different offices) to be updated on a regular schedule. Many of IRG 's Lotus Notes databases are used in Lotus' overseas offices. Because Lotus Notes has integrated electronic mail, database documents can be mailed between Lotus Notes users.

There are four main application types for which Lotus Notes is particularly suited. These include tracking applications; broadcast applications; reference applications; and discussion applications.

* Tracking applications are those that are highly interactive, have many users and are continually updated. Examples are client service tracking and project tracking.

* Broadcast applications are those that are made available to a large audience and where information is often time-critical but remains static thereafter. These include industry news databases, newsletters and meeting agendas and minutes.

* Reference applications, similar to broadcast applications, are used as document libraries. Examples include market research databases and company information databases.

* Discussion applications support group communication. They function like electronic bulletin boards where users address new topics and respond to others. They are focused around common interests. Examples are customer feedback and opinion databases and brainstorming databases.

Lotus Notes databases can combine these features. For example, a library research tracking database can also record user feedback.

One need not be a programmer to develop a Lotus Notes application, and database development can proceed rapidly. The Lotus Notes database has four components: fields, forms, documents, and views. Databases are collections of documents stored under a single name. Each database is represented by an icon that appears on the Lotus Notes desktop. The Lotus Notes desktop uses a metaphor of file folders that store a number of icons, or databases in

each of the folders. The folders can be labeled (Figure 1).(Figure 1 omitted) Fields are defined in a form and have a particular data type, for example, text, number, date etc. Fields can be arranged on the form as desired, along with any static text, such as user prompts, headings, titles, etc. The text handling supports multiple fonts, text attributes, color, and formatting. A form can have an unlimited number of fields and a database may have several forms that support different types of documents stored in the database. The database document is the result of information entered into a form. Documents can be any size. Documents are accessible for reading, printing, and editing by means of the Lotus Notes database "view." Lotus Notes views are tabular summaries of documents in the database. Databases can have many different views. Each row in a view represents a single document. Columns display single fields from the document. Views can be designed so that they select documents matching a particular topic or selection criteria. Views might also display only those documents created with a particular database form. The views may be categorized by individual fields from the documents, for example, by date, by author or by title (Figure 2). (Figure 2 omitted)

In summary, the Lotus Notes development environment is very flexible and a document library, reference database, or full-text electronic publication is a very straightforward design that an information specialist can easily develop. Additionally, Lotus Notes comes with several database templates that can be used directly or modified for new applications.

Lotus Notes servers run under the OS/2 operating system and Lotus Notes clients or individual user workstations can operate under Windows or OS/2. Other operating systems will be supported in the future. Lotus Notes servers also run under popular LAN protocols.

IRG'S CURRENT SUITE OF APPLICATIONS

IRG's current suite of information applications include industry news databases; Micro Notes; the IRG catalog; market research databases; electronic full-text publications; various other Lotus Notes alliance partner products; and databases used for administrative purposes, which optimize IRG's productivity.

INDUSTRY NEWS

IRG has been a pioneer in electronic industry news distribution. We currently provide our clients with several news services. We will talk about three of them. Mentioned earlier in this article, IRG had created an industry news service. IRG searched for the information daily in online databases, downloaded relevant stories, and redistributed these via e-mail. IRG moved distribution to Lotus Notes by designing a Lotus Notes database

to store and organize the stories according to topic, thereby promoting simultaneous daily access for all users.

The newswire database was so successful that IRG persuaded INDIVIDUAL, Inc. to use Lotus Notes as one of the electronic distribution platforms for their product First! IRG receives daily news stories from more than a hundred newswire sources via First! INDIVIDUAL's SMART retrieval software, developed at Cornell, monitors 3D separate topics relating to the computer industry and specifically to business at Lotus, and retrieves the most relevant stories. The stories are then reformatted into documents in a Lotus Notes database and distributed daily to Lotus. The Lotus Notes server at INDIVIDUAL, Inc. calls the Lotus Notes server at Lotus and establishes a connection to deposit new documents (daily updates) into the IRG database. Lotus Notes database replication is the method by which these servers identify databases in common and exchange newly created or updated information.

Lotus Notes database design features allow the end-user to view the stories by any one of several access points. Views are categorized by date, topic (Figure 3), company, source and by subject keyword.(Figure 3 omitted) The subject keyword list contains all the words from the title of the story with the exception of stop words. The savvy Lotus Notes user can create private views that arrange the documents according to personal interests. With version 3 of Lotus Notes, all documents in the database can be searched with full-text retrieval software. The IRG Industry Newswire database is used worldwide at Lotus and, together with Micro Notes, mentioned next, is the most-used and visible electronic service provided by IRG.

IRG Micro Notes is a newsletter that focuses on how Lotus is perceived in the trade press. It is written weekly and summarizes press coverage during the preceding week. A Lotus Notes form creates a visually appealing document, which is the format for the newsletter, much like a masthead. The newsletter editor writes directly in Lotus Notes, then dials up the IRG server and enters the new document. Copies of the database are updated around the world, generally within 24 hours.

IRG delivers a real-time electronic news broadcast service via Lotus Notes that includes all of the wires from Dow Tones' DowVision service and ZiffWire from Ziff Desktop Information. The software that manages the wire stories, selects them according to interest profiles, and delivers them into a Lotus Notes database is NewsEDGE, a product of Lotus Notes Alliance Partner, Desktop Data, Inc. The installation includes a computer that receives the DowVision transmissions via modem, FM sideband broadcasts from Ziff, and has the NewsEDGE software installed on the machine The IRG NewsEDGE server, as it is called, writes the selected news stories into a

database on IRG's Lotus Notes server. The NewsEDGE server is connected to the Lotus Notes server via Lotus' local area network. Senior managers at Lotus access the service from the IRG Lotus Notes server where they create individual profiles to track fast-breaking international economic, political, and industry news as well as prepublication summaries and full-text of leading computer trade publications. NewsEDGE profiles retrieve only stories that match one or more of the individual keywords. All stories from a profile can be stored in a separate database, or stories matching many profiles can be stored in a single database. Database views include those arranged and categorized by profile or by individual keywords matched in the wire story. A headline view allows the user to see all of the headlines by date and time, retrieved by all of the profiles as they scroll in minute-by-minute. This service provides Lotus managers with critical lead time to deal with competitive and other business issues. Because the service is readily accessible on the Lotus Notes "desktop," the reader need only click on the icon, representing the NewsEDGE story database, to see updated news.

THE IRG ELECTRONIC CATALOG

The IRG Electronic Catalog was originally designed to hold bibliographic information on the 4,000 or so items in the Resource Center collections: books, reference works, software, videos, and audiotapes. That information had previously been available to IRG's clients in first a DataTrek library system and then an IRG library system. As clients became more familiar with Lotus Notes they strongly suggested that IRG provide the catalog on the Lotus Notes platform.

The biggest challenge in building the catalog was importing the cataloging records from IRG to Lotus Notes but we were helped by a senior Lotus Notes developer who wrote an import profile. Four thousand records were imported into the Lotus Notes database in about an hour with absolutely no garbled or missing data. Each catalog record had the following fields: title, author, call number, publisher, publication date, subject heading, notes, accession number, edition, pagination, medium, publication type, series title, and date cataloged (Figure 4).(Figure 4 omitted) Available views were by title, author, medium, publication type, accession number, series, title subject heading, title keyword, call number, and date cataloged. All of the fields and views were designed in-house by a member of the IRG staff and were completely customizable. Fields and/or views could be added or deleted at any time. A few useful features were added to the catalog record; when cataloging a new item, the accession number was automatically generated, the present date automatically showed up in the date cataloged field, and a filter was written to parse out the title keywords and put them in a keyword field. The medium and publication type fields each offered a list of choices and would not accept anything

not on the list.

As IRG divested itself of most of its physical collections, letting clients take material on "permanent loan," a "permanently loaned to:" field was added to the catalog record. A filter was written to facilitate entering borrower names and the catalog was updated to reflect the permanent borrower of a specific title. Views by title/borrower and borrower were added to the catalog and the whereabouts of any item became available to all clients through access to the catalog database. IRG is continuing to catalog new reference titles and new internal videos.

MARKET RESEARCH DATABASES

IRG has contracted for several years with leading computer industry market researchers. The reports and bulletins that are issued by these vendors contain critical information to be used in the planning, development, and marketing of Lotus products. Much of this information has been available only in print format. Moreover, it is difficult to organize the multiple report formats for rapid retrieval. About three years ago IRG began to create an electronic catalog of reports received by the IRG Resource Center from the various market research vendors. The IRG Market Research Catalog document form was created to optimize retrieval of documents, using fields that allow the creation of views by company, research vendor, date and by geographic region. IRG research staff enter brief summaries describing the content of the research, newsletter, or industry analysis. By providing a catalog of such information, IRG research staff and their clients are far more likely to locate needed research.

However, IRG decided to take this one step further. With the market research catalog database as an example, the research vendors were encouraged to publish their research in the Lotus Notes environment and, like INDIVIDUAL, Inc., to distribute their products to their customers who use Lotus Notes, directly in a Lotus Notes database. IRG has been successful in signing on several of these vendors. These include The Burton Group; Forrester Research Inc.; META Group; and New Science Associates.

IRG and Lotus also receive replications of a Lotus Notes-based product from the Patricia Seybold Group called Notes on Information Technology. This information service was developed by the Patricia Seybold Group and offered to Lotus prior to any of the products mentioned above. Lotus Notes on Information Technology was the first to use the interactive features of Notes whereby reader comments are incorporated with the original publication resulting in what might be called an "interactive publication." As a result, IRG and clients have access to the full text of this research via the Market Research Catalog and individual full-text databases. The full-text market research databases often incorporate graphics with text in

individual documents. The full-text retrieval software in Lotus Notes will rapidly locate needed information, saving IRG staff and clients valuable time.

HOOVER ENABLES LOTUS NOTES TO SEARCH THE "ELECTRONIC OCEAN"
Also a part of IRG's Virtual Library offerings, are information products developed by SandPoint Corporation using their product called Hoover, a Lotus Notes add-in. Hoover works in conjunction with Lotus Notes to retrieve documents from a variety of external and internal information sources. Lotus Notes end-users can query the external or other internal resource directly from a Lotus Notes database. Here is the way a typical Hoover-enabled Lotus Notes application works. The end-user fills out an electronic form, which prompts the user to enter keywords and/or choose specific company names or industries on which to retrieve information. Hoover is programmed to take the Lotus Notes request, and establish communications with the appropriate information source, which could be Dialog Information Services, Dow Jones News/Retrieval, broadcast news, such as that from DowVision and its providers, as well as CD-ROM-based information services, such as SilverPlatter's SEC Online. Once the communication is established, Hoover extracts the specified information using a series of scripts that are programmed to search specific databases using proper codes established for those databases. Hoover then brings the information retrieved back into the Lotus Notes database environment.

IRG uses a Hoover-enabled product called Company Profile Plus. This is a tool that allows IRG to create on-demand profiles of a public or private company within an hour. Once created, a company profile can be updated regularly. Hoover can be programmed by the system administrator to update financial information quarterly, news sources daily or real-time, etc. The company profile can be an extensive collection of information culled from numerous disparate sources. IRG intends to work with SandPoint to program Hoover to select related documents from other IRG Lotus Notes databases so that one database will collect all information on a particular company. The most compelling advantage in this is that IRG's users will not need to search several databases to find this information, nor necessarily be concerned with whether it was gathered from external sources or internal sources.

Hoover operates on a 24-hour basis and can be automated to retrieve information on an appointed schedule. A good example of such an application is IRG's Hoover-enabled electronic version of the Wall Street Journal. Hoover is programmed to search Dow Jones and deliver daily electronic editions of the Wall Street Journal into a Lotus Notes database. The advantage of this electronic edition is that Hoover has extracted the meaningful codes from Dow Jones so that views are created to show the news by company, industry, region, dateline, news subject, market sector, etc.

The main view of the database is organized by section, which is consistent with the way many people like to read the paper. This is a most effective way to track information in the Wall Street Journal. No one would dispute that there are reasons to continue reading the paper version, however the electronic version offers a very effective way to locate specific information from the current issue. Electronic access to the current issue of the Wall Street Journal is a very compelling offering and it is on IRG's end-user desktop often before the print copy arrives.

Another search tool from SandPoint is Business Topic Research (BTR). The BTR Lotus Notes database contains a form that prompts the requester to fill in keywords and indicate the relationship between those terms as in, AND, OR, NEXT TO, WITHIN ONE WORD OF, or other logical connector. The form also offers help for the user in understanding the Boolean and proximity relationships. Next the user is prompted to choose from a list of information domains from which the information is to be retrieved. There are three domains that relate to the business press and newspapers. The remaining domains include named industries and all domains can be tailored to a particular client's needs. This tells Hoover to look for information in specific publications that cover news and information for those industries. Users also indicate how far back to search by checking the appropriate box provided in the form as in, "within the last week," "within the last month," "within the last year," "as far back as possible." Hoover will supply citations only, citation and abstract or full text according to which box is checked by the end-user. Hoover will also keep track of expired online time, estimated costs and limit retrieval to a "not to exceed" cost. SandPoint has done a considerable amount of work coordinating and developing information license agreements and usage administration with the providers of all three of the services mentioned above. IRG offers the BTR as an end-user searching tool for certain clients.

HELP DATABASE: ROADMAP TO IRG AND THE VIRTUAL LIBRARY

All of the information products that are available to IRG's clientele are fully described in a separate Lotus Notes database known as the IRG Help Database. The Help Database has a unique function in that it is the "roadmap" to IRG's Virtual Library. This database enables IRG to inform end-users about the location of all of the various IRG databases comprising the Virtual Library. It provides a description of the content and scope, indicates for whom information is intended, details licensing arrangements, and indicates whether or not each of the databases are available for use by all Lotus employees or by subscription only. If there are subscription fees, these are noted in the individual documents that describe the database. The Help Database also describes all of the other IRG services.

Database views include a general view that contains documents related to

IRG administrative topics (Figure 5).(Figure 5 omitted) Each heading in the view is related to a document that provides further details on the topic. Another view lists recent announcements, which IRG uses to inform users about changes to existing databases or services, note new services and update users on any other news from IRG. Lotus Notes database view lists each IRG database comprising the IRG Virtual Library. Each of the documents fully describes the named database. Not only are IRG Lotus Notes databases featured in the IRG Help Database, but also other IRG services are described in full with contact information. Additional views include CD-ROM-based services in IRG's Reading Room as well as those that are available through Lotus Notes; sources for company and competitor information; sources for international information; market research services; etc. The views are aimed at assisting users to identify which IRG databases or information services to employ in locating particular types of information.

Another function of the database permits Lotus employees to fill out a request form (also stored in the database) to enlist the assistance of IRG's research services staff. The client fills out the electronic form. When the form is saved, it is routed automatically, using Lotus Notes integrated mail features, to another IRG database known as the IRG Infoline. The IRG Infoline is a service tracking database that records the IRG's information requests that have been mailed using standard Lotus Notes mail, or mailed from the IRG Help Database. The IRG Infoline database allows IRG to keep track of all requests received electronically as well as those that are entered individually by each staff researcher who receives requests. The Help Database also keeps track of any comments or questions recorded by the database user. The user simply fills out another electronic form (again stored in the database), which allows him/her to enter a question or comment. IRG staff monitors these questions and enters a response. Using a view called "User Comments," both the questions from users and the responses from IRG staff are there for all to read. The view presents a hierarchical structure so that the response(s) are indented under the original comment. This approach extends a single interaction to all users, and in effect, creates an electronic dialogue between IRG staff and clientele.

IRG dedicates two Lotus Notes servers for the Virtual Library and for all other IRG business. When a user browses the databases available on the IRG servers, simply named IRG_1 and IRG_2, he/she will immediately notice the IRG Help Database at the top of the list. IRG has also issued a number of "press releases" internally to promote use of the Help Database and the IRG Virtual Library.

LOTUS CD/NOTES

A set of four company information products, published by Lotus Development

Corporation's One Source Division, is available through IRC's Virtual Library. The products are CD/Notes: U.S. Public Profiles; CD/Notes: U.S. Private Profiles; CD/Notes: SEC Text; and CD/Notes: Articles. Each is an information product delivered on CD-ROM with the information stored in Lotus Notes database format. Because the data is stored as a Lotus Notes database, the products appear on the IRG Lotus Notes server as individual databases, or a set of icons, that can be used and shared by those who access IRG's server. The server has been configured with four daisy-chained CD-ROM drives and each month when the new CD-ROM discs arrive, they are inserted to replace the previous discs. This solves the issue of networking these particular CD-ROM products since Lotus Notes is network-based. Licensing issues internally have been worked out by the One Source Division's licensing agreements with the information providers. They are a useful set of end-user information tools that are available to those who access the IRG Lotus Notes server.

CD/Notes: U.S. Public contains company financial and business data provided by Market Guide, Inc. Included are over 6,200 foreign and domestic companies publicly traded on the national U.S. stock exchanges. CD/Notes: U.S. Private is a database of 120,000 private companies in the U.S. from Ward's Business Directory provided under agreement with Information Access Company. Each profile includes name and address, key executives, description of business, SIC codes, sales and employment. The product is divided into separate databases for each of seven regions of the U.S. CD/Notes: SEC Text contains data provided by SEC Online, the online full-text database of reports filed by public corporations with the Securities and Exchange Commission. Documents in this database serve as the source of more than 70 percent of all business and financial data on public companies CD/Notes: Articles include abstracts from articles in the PROMT database published by Predicasts, Inc. It includes information from over 750 of the world's leading business and trade publications about U.S. and foreign companies. It covers new products and technologies; acquisitions, mergers, and organizational changes; forecasts of significant industry trends; financial and other fiscal news; and legal and regulatory matters that affect businesses.

PRODUCTIVITY GAINS

Because IRG has been able to develop the Virtual Library using Lotus Notes, there are numerous productivity gains. IRG can promote access to full-text electronic data to a worldwide clientele. Information may originate in one place yet be available to a geographically dispersed clientele through database replication supported in multiple-LAN and WAN environments. Remote users can dial-up Lotus Notes servers to access information on laptops. Data updates and synchronization occur within a 24-hour period. Multiple users can access the data simultaneously through the same interface with

which they conduct all of their business, reducing the learning curve. End-users can customize their own virtual library consisting of various pieces of the IRG Virtual Library simply by arranging icons, representing selected IRG Lotus Notes databases, onto their Lotus Notes "desktop" (Figure 6).(Figure 6 omitted)

The information retrieval technology incorporated into Lotus Notes (which should be available by the time this article is published) allows for rapid full-text retrieval of all the data in all of IRG's databases. Users will be able to search single or multiple databases at once with Boolean logic, proximity operators, phrase searches, and truncation and, to retrieve results that are in ranked order with word highlighting. The Virtual Library has benefited from the innovative products available from Lotus Notes Alliance Partners and Lotus Notes electronic publishers. IRG has been able to leverage the attractiveness of Lotus Notes as a distribution platform to promote new electronic versions of publications and information products. We will continue this effort. The IRG research staff has more effective tools with which to locate required information to deliver to clients. The time saved in locating information allows the research staff to apply their talents more to synthesizing and analyzing information. There is an additional gain with respect to cost effectiveness of information. As large corporate licenses are negotiated with information providers IRG benefits from volume pricing. This makes it easier for IRG to rationalize end-user chargeback and to reinforce client appreciation of the value of the information that IRG delivers.

LOTUS NOTES USE IN OTHER LIBRARIES AND INFORMATION CENTERS

Innovative applications are being developed in other libraries and information centers as well as Lotus. A large publishing and information services company in New York City has a small Lotus Notes installation that is expected to expand during 1993. While the corporate information center has been involved in helping to develop applications for the company's sales staff, several "library-specific" applications have been developed: a catalog for the book and archives collection, a tracking database for standing order books and magazines, a tracking database for a collection of training and development videos that employees may borrow, a fax cover sheet form, and a company memo form. A department "Rolodex" has been started that permits the Information Center staff to share the names of helpful contacts at other libraries, major Information Center vendors, even interesting charts or data located while scanning newspapers! The database may be viewed by subject, contact person, library or vendor. The vendor section has been particularly helpful because account numbers are immediately available as well as comments regarding previous calls.

Applications developed for the company's corporate and sales staffs include

a listing of Information Center services available, a company stock price history, a phone directory of over 8,000 public company headquarters, downloaded from one of the company's CD-ROM products, and a listing of major company products and key contact personnel. External news sources are available as well, with publishing company news pulled into a customized database by the Information Center staff.

The manager of the information center attended the introductory applications development class offered by Lotus and feels that there is a natural fit between the capabilities Lotus Notes offers to organize information and the needs and objectives of the business library.

Arthur Andersen/Andersen Consulting Library is interested in developing both customer-driven and administrative applications using Lotus Notes. All of their practices would benefit from a database of former proposals, abstracted or scanned in full text, to improve access to prior experience when developing new proposals. Further applications to filter external information according to user profiles would help them address the problem of information overload on the part of practice personnel. Administratively, because they charge back for a number of services, Lotus Notes would allow them to standardize their accounting reports through shared templates for research time and database costs. A librarians' discussion database would help them meet the ongoing challenge of sharing ideas worldwide.

In an environment such as the Corporate Information Research Center (CIRC) at GE's Corporate Headquarters, Lotus Notes was introduced as an organizational memory tool or organizational learning product in July 1992, since the group handles over 20,000 research requests a year. Seventy-five percent of these requests are from the many diverse GE businesses, such as Plastics, Major Appliances, Lighting, Financial Services, Power Generation, etc., with the remainder being from the Corporate staff in Fairfield, Connecticut.

The original catalyst in the decision process for obtaining Lotus Notes was as a productivity tool. Lotus Notes was introduced to a small subset of the CIRC in January of 1990 through an application development opportunity where Denise O. Lipkvich, Susan St. George, and Doreen Early from GE worked with an entrepreneurial company, SandPoint, to design a filter called Hoover (the same product described earlier) to capture data from various news feeds, CD-ROMs, and online database providers as "agents" (hence the Hoover metaphor--J. Edgar that is--not Hoover the vacuum cleaner!) to enhance the data collection process as part of the cycle of business analyses in completing customer, competitor, and market analyses.

Either way, Lotus Notes is a tool that now provides the CIRC with

institutional "memory" of who did what request for whom, what the nature of the request was, the methodologies used, the costs, and any other ancillary comments for future researchers to learn from. Information as a reusable asset is the key.

At Gemini Consulting, Inc., Lotus Notes will be one of the core technologies that will enhance the firm's development as a collaborative and learning organization. Kevin Barry, Gemini's Manager of Information Coordination, and Carolyn O'Hara, Research Manager, are among the team members participating in extensive Lotus Notes planning efforts, particularly in the design and implementation of the Virtual Library environment. Two key development priorities are capturing Gemini's organizational memory and accessing external news and information feeds.

Gemini's organizational memory database will enhance the ability of Gemini team members to share the collective knowledge of the firm, build on previous work and highlight "best of" class documents. External news and information filtering and dissemination will enable Gemini consultants to stay on top of current developments related to key clients, industries, and subject interests.

FUTURE DIRECTIONS OF THE VIRTUAL LIBRARY

We at IRG have found Lotus Notes to be a great foundation for our virtual library. Its relatively simple database design features have allowed us to build customized and flexible applications that fill the needs of our specific organization; other libraries have built suites of applications that meet their unique needs. It provides an easy-to-use graphical user interface to a variety of information--real-time news, CD-ROM, full-text reports, bibliographic descriptions, request tracking, internal documents, newsletters, discussions, mail, and so on--and presents a common user interface for use by our clients that alleviates the need to train them on may different systems. We feel that Lotus Notes will accommodate our future plans for the Virtual Library, such as developing subject-specific full-text Lotus Notes databases; taking part in a document imaging pilot using Lotus Notes: Document Imaging, a Lotus Notes add-in product; and exploring the uses of multimedia in Lotus Notes.

THE AUTHORS

Kristen Liberman is a senior information specialist at Lotus Development Corporation. While at Lotus, she has managed the IRG Resource Center and has designed and maintained corporate-wide information services delivered through Lotus Notes. She is the coordinator of the Lotus Notes special interest group for information professionals.

Kris has also worked at the C.S. Draper Laboratory, Simmons College

Libraries, and the Brookline (MA) Public Library. She received a B.A. in English and American Literature from Brandeis University in 1978 and an M.S.L.S. from Simmons College Graduate School of Library and Information Science in 1987.

Jane L. Rich is a senior information specialist and technologist at Lotus Development Corporation. While at Lotus, she has designed and produced information services delivered on CD-ROM and in Lotus Notes. She has been responsible for the development of IRG's Industry Newswire service and other electronic services. She is a Lotus Notes database designer and the system administrator for IRG's Virtual Library. Her background includes library automation, corporate information services planning, and management and online research in business and medical libraries. She received an M.A. in Library and Information Science from the University of South Florida.

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...TEXT: time. A few useful features were added to the catalog record; when cataloging a new item, the accession number was automatically generated, the present date automatically showed up in the date cataloged field, and a filter was...

...keywords and put them in a keyword field. The medium and publication type fields each offered a list of choices and would not accept anything not on the list.

As IRG...
930600
? t s3/7,k/5

3/7,K/5 (Item 5 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00618928 92-34030
Compliance: No Exception for Government Contractors
Peiffer, Frank G.
Journal of Accountancy v173n6 PP: 94-100 Jun 1992 CODEN: JACYAD ISSN:

0021-8448 JRNL CODE: JAC
DOC TYPE: Journal article LANGUAGE: English LENGTH: 6 Pages
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ABSTRACT: Government procurement includes commercial suppliers which provide the government with numerous nondefense products and services. To operate successfully, the financial executives of government suppliers, and their outside auditors, must be familiar with the often restrictive government acquisition regulations. These rules apply no matter what product the company sells to the government. Government suppliers are required to certify the commerciality of their products and to provide evidence that the offered government discount from list price is at least equal to the discount offered the supplier's most favored customer. If the government believes it was overcharged because it relied on defective data, it will request a refund. In addition, suppliers may be subject to both civil and criminal penalties.
TEXT: When they think of government procurement, most people picture multibillion-dollar weapons systems. Media coverage of the termination of large defense contracts reinforces this perception, as did the Persian Gulf war. Admittedly, defense is the largest sector of government procurement and is the focus of the American Institute of CPAs audit and accounting guide, Audits of Federal Government Contractors. However, a number of commercial suppliers provide nondefense products and services to the federal government. It is critical for practitioners auditing these companies and for corporate financial executives to be familiar with the government's system and control requirements if they are to operate successfully in this area.

All federal procurement of supplies and services is governed by a precise set of acquisition regulations outlining the framework within which the government and its contractors or prospective contractors operate. The federal acquisition regulation (FAR) is the principal system. Many departments and agencies, such as the Department of Defense and the General Services Administration (GSA), supplement these rules with their own special requirements. All pertinent regulations are available in Code of Federal Regulations (CFR) form from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Nondefense government contractors often are lulled into a false sense of security; they fail to realize how pervasive the regulatory aspect of government contracting can be. Regulations and requirements apply no matter what product or service a company sells to the government. The chief financial officer of a company selling fighter planes no doubt understands the rules, but the CFO of an office supply company may not recognize the need for strict compliance. This article's purpose is to clarify this confusion, both for independent auditors and for executives with operational and oversight responsibility.

FEDERAL SUPPLY SCHEDULE PROGRAM

The federal supply schedule program (FSSP) is authorized by FAR part 38. Managed by the GSA, the program provides federal agencies with a simplified means of acquiring commonly used supplies and services, including office furniture, copiers, hand tools and computers.

As the primary buyer for all agencies, the GSA tries to obtain the lower prices associated with volume purchases by awarding contracts from which individual agencies fulfill their needs. The Veterans Administration is an exception; it has been authorized by the GSA to award federal supply schedule contracts for medical, dental and veterinary supplies. In doing so, the VA has adopted GSA policies, procedures and forms.

Under the program, ordering agencies

* Issue orders directly to contractors.

* Receive shipments.

* Pay contractors.

* Administer individual orders.

Contracts are awarded in two ways: by sealed bid and by negotiation. In both cases they are listed according to product type and are commonly referred to as schedules. Sealed-bidding procedures allow the government to award contracts solely on the basis of the lowest price offered by a qualified supplier. Companies awarded schedule contracts by sealed bid do not have to comply with the rules governing negotiated contracts.

For negotiated contracts, the offeror submits a proposal that is the basis for price negotiations. The process results in an agreement between the supplier and the government. These are "bread-and-butter" products with recognized brand names.

Four types of schedule contracts are awarded:

* Single award schedule.

* Multiple award schedule (MAS).

* New item introductory schedule.

* International federal supply schedule.

The principal means of contracting is through the MAS program. This article focuses on MAS contracts because they are highly complex and demand compliance with preaward (for the offeror) and postaward (for contractors) disclosure requirements. Strict compliance is mandatory because GSA auditors have increased their contract audit activity of FSSP contractors. The GSA has been successful in obtaining multimillion dollar refunds when contractors fail to comply with applicable procurement rules. In some situations, civil and criminal penalties have been imposed.

MAS COMPLIANCE

PREAWARD DISCLOSURES. The heart of the preaward disclosures is found in the discount schedule and marketing data (DSMD) form, which is part of the solicitation, offer and award document obtained from the issuing office or buying center. The document contains all forms necessary to prepare a GSA offer. The DSMD form requires discount information on six customer classes:

* Dealer--retailers.

* Distributors--wholesalers.

* Education institutions.

* Original equipment manufacturers (OEM).

* State, county and local governments.

* Others (including national accounts).

Among other things, the DSMD form requires disclosing the highest discount offered each customer class on any product or model within a particular special item number (SIN). A SIN is given by the GSA to designate specific product categories on a schedule. For example, SIN 476-11 is aerosol disinfectants; SIN 476-13 is liquid disinfectants. The DSMD form also requires disclosing sales data on products.

The MAS policy statement of October 1, 1982, which gives the GSA's objective in negotiating contracts, says, "The Government's goal when negotiating MAS contract pricing arrangements is to obtain a discount from a firm's established catalog or commercial price list which is equal to or greater than the discount given to that firm's most favored customer (MFC). The MFC discount is equal to the best discount given by a firm to any entity with which that firm conducts business, other than the...OEM...discount."

The statement also says the "GSA will not award an MAS contract to a firm that does not give the Government a price equal to the best price given or available to its large volume end user customers with comparable terms and conditions except where the Government's overall volume of purchases does not warrant the best price."

COMMERCIALITY. Commerciality is relevant because this attribute must exist to qualify for an exemption from submitting cost or pricing data. These data refer to the composition of the offered price by detailing individual cost elements such as labor, material and overhead plus profit. Commerciality means

* The price of the items sold is based on established catalog or market price.

* Those sales are substantial and made to nongovernment entities. FAR 15.804-3(a)(2) says cost or pricing data are not required when prices are "based on established catalog or market prices of commercial items sold in substantial quantities to the general public."

Established catalog price (less published discount) means a price recorded in a regularly maintained form such as a catalog, price list or schedule. Market price is determined by buyers and sellers free to bargain and must be substantiated by independent data. Sales are considered substantial based on a ratio test, which divides sales into three categories:

A. Sales to the U.S. government or to contractors for U.S. government use.

B. Sales to the general public at the catalog price.

C. Sales to the general public at other than catalog prices.
FAR 15.804-3(f)(3)(i) says sales to the general public are normally regarded as substantial if

* Category B and C sales are not negligible in themselves and equal at least 55% of total sales of the item.

* Category B sales equal at least 75% of the total of category B and C sales. An illustration of such a calculation can be found in exhibit 1, above. (Exhibit 1 omitted) At present there is a proposed revision to the FAR that would change the ratios. Despite this, the principle illustrated in the exhibit remains the same.

PREAWARD CERTIFICATIONS. It is evident the government intends to rely on the discount data supplied by the offeror in the preaward stage for negotiating the contract price(s). It is critical the data supplied be

accurate, complete and current. Should the data prove to be otherwise, they are considered defective. The government may then make a downward adjustment in price under the provisions of the "price reduction for defective pricing data" clause.

Additionally, the offeror is asked to certify the commerciality of the offered items. Should the items later be found not to be commercial, the offeror will be required to submit relevant cost or pricing data. For any items sold, the government may request a refund for the difference in the negotiated price (based on sales and discount data) and the data-supported price.

PRICE REDUCTION FOR DEFECTIVE PRICING DATA. All MAS contract solicitations
contain a clause (FAR 52.215-22) entitling the government to reduce the contract price if, subsequent to the award, it learns it relied on defective contractor data in negotiating that price.

In the certificate of established catalog or market price, the offeror certifies to the best of his or her knowledge

* Prices quoted in the proposal are based on established catalog or market prices of commercial items, as defined in FAR 15.804-3(c), in effect on the date of the offer or of any revisions.

* Substantial quantities of the items have been sold to the general public at such prices.

* All data (including sales data) submitted are accurate, complete and current representations of actual transactions. The certificate also contains a warning that false statements may subject the offeror to penalties.

Experience shows the last item, data, usually proves the most troublesome in terms of potential liability. An example is when the government negotiates a discount from list price in the erroneous belief, based on the information supplied, that it achieved the same discount as the offeror's MFC. Exhibit 2, page 99, illustrates the adjustment made in such circumstances. (Exhibit 2 omitted)

POSTWARD DISCLOSURES. Disclosures required during contract performance cover contract price reduction and government orders and sales. Contractors are required to report to the contracting officer (the government official who authorized and administers the contract) all price reductions granted to other government or nongovernment customers. The schedule contract item price may then have to be reduced accordingly. Contractors also must report

to the contracting officer all orders received under the contract. This is usually done on a quarterly basis.

By far the most critical postaward disclosure involves price reduction. This type of price reduction should not be confused with the previously described defective data reduction. Price reductions can be classified as (1) those to customers other than federal agencies and (2) those to federal agencies. The nongovernment customers are described first.

The 1982 GSA policy statement requires all MAS contracts to contain a price-reduction clause designed to maintain the price relationship that existed between the government and the identified customer category at the time of the original award. A price reduction is any change in the commercial pricing arrangement that disturbs this relationship and places the government in a less advantageous position. Exhibit 3, page 100, illustrates a price reduction calculation triggered by a lowering of prices. (Exhibit 3 omitted)

The clause also covers price reductions granted to federal agencies. It specifies that when the contractor gives a federal agency a price lower than the schedule contract price for the item, and the order is within the maximum order limitation (MOL), an equivalent price reduction applies to all subsequent sales. The MOL is a contractual upper dollar limit set on individual contract orders the buying agency can place. A MOL of $10,000, for example, means no orders above this amount should be placed by the government or accepted by the contractor.

POSTAWARD CERTIFICATIONS. Within 10 calendar days after contract end, the contractor is required to execute a contractor's statement of price reductions, certifying either (1) there was no applicable price reduction or (2) any price reduction was reported to the contracting officer. A strict reading of the price-reduction clause provisions requires the contractor to report price reductions granted to all customer classes, not just those granted to the identified customer class.

FSSP SYSTEM AND CONTROL REQUIREMENTS

Key to a successful compliance system is an accounting system with the following five capabilities:

1. CUSTOMER CLASSIFICATION SYSTEM. To disclose discounts by the customer classes specified in the DSMD form customers must be properly categorized. A company must establish classification definitions that are clear and concise. It should adopt a data format for information from current and future customers and have a separate category for product sales to government users.

2. PRODUCT DISCOUNTS BY CUSTOMER CLASS. This capability is critical. The discount level disclosed in the DSMD form must be accurate, complete and current, because the company is required to certify it as such. If the data subsequently are found to be faulty, the government is entitled to the previously described downward price adjustment. The discount data submitted by the company are subject to the GSA's preaward and postaward audit.

3. APPROVAL, MONITORING AND QUANTIFICATION OF PRICE REDUCTIONS. Since price reductions provided other customers must be reported, there must be a system to monitor, report and assure the processing of only management-authorized price reductions. The system also should be capable of quantifying price reductions from rebates, credits and special pricing promotions.

4. CATALOG OR MARKET PRICE OF PRODUCTS. To provide management with reasonable assurance the offered items meet the commerciality test, the system should be able to select individual product sales data on the basis of identified customer end user and determine if in fact sales were made at catalog price.

5. ORDER ENTRY AND PROCESSING. The order entry and processing function is important because it is the source of the data needed to ensure compliance. The system must be capable of producing summary data in a statistical fashion encompassing

* Identifying and quantifying discounts from list prices granted to each customer class.

* Identifying price list(s) used to compute discount percentages.

* Identifying and reporting deviations from appropriate discount levels.

* Processing only properly approved price deviations.

* Maintaining product prices negotiated under FSSP contract in order to assure proper billing.

* Identifying orders placed by government agencies and other authorized users of the schedule under contract.

CIVIL AND CRIMINAL PENALTIES

The government frequently performs preaward and postaward audits of MAS contracts. Alleged contractor misstatements found in the preaward stage usually are cleared up with the contracting officer during the negotiation

process. The more bothersome are alleged misstatements found in a postaward audit. "Postaward" is the period after the contract has been awarded or, as most often happens, the contract is over. If the government believes it was overcharged because it relied on defective data, it will request a refund.

Lately the Justice Department has pursued these refunds under the False Claims Act, under which each claim for payment (an invoice) under a defectively priced contract is a separate false claim with the potential for a separate penalty. The penalty for each violation can be between $5,000 and $10,000 per claim. The government also can recover three times the damages it sustains and may seek criminal and civil penalties.

DISTINCT MARKETPLACE

Commercial product sales to the government are no different from sophisticated weapons systems sales to the armed services. Selling through the FSSP represents a distinct marketplace with its own peculiar rules and regulations. Just as the independent auditor of a defense contractor must be familiar with the environment in which it operates, so must the auditor of contractors selling commercial products to the government. Failure to comply could lead to loss of the contract or expensive litigation.

The FSSP operates in a regulated environment that must be understood and appreciated. Lack of compliance can have a direct effect on financial statements. It is in a company's best interests, as well as the outside auditors', to be informed so audits are properly focused and CPAs can render sound advice and service.

EXECUTIVE SUMMARY

* Government procurement goes far beyound defense contracts. Commercial suppliers provide the government with numerous nondefense products and services.

* To operate successfully, the financial executives of government suppliers, and their outside auditors, must be familiar with the often restrictive government acquisition regulations. These rules apply no matter what product the company sells to the government.

* The GSA has designed a program to provide federal agencies with a simplified means of acquiring commonly used supplies and services. The GSA's goal is to achieve the lower prices usually associated with volume purchases.

* Government suppliers are required to certify the commerciality of their products and to provide evidence that the offered government discount from

list price is at least equal to the discount offered the supplier's most
favored customer.

* If the government believes it was overcharged because it relied on
defective data, it will request a refund. In addition, suppliers may be
subject to both civil and criminal penalties.

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the Price Waterhouse government contractor consulting service. A former
auditor with the General Services Administration (Inspector General), he is
a member of the American Institute of CPAs, the Association of Government
Accountants and the National Contracts Management Association.

...TEXT: Others (including national accounts).

Among other things, the DSMD form requires disclosing the highest discount
offered each customer class on any product or model within a
particular special item number (SIN). A SIN is given by
the GSA to designate specific product categories on a schedule. For
example, SIN 476...
920600
? t s3/7,k/9

3/7,K/9 (Item 2 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

07302759 SUPPLIER NUMBER: 15523593 (THIS IS THE FULL TEXT)
Software buyers' guide. (Buyers Guide)
Purchasing, v116, n8, p41(5)
May 19, 1994

TEXT:
American Software. Supply Chain Management Purchasing program supports
blanket, contract, standing, normal, and emergency purchases. Enters
free-form notes for non-standard information. It produces change notices,
receiving documents, and supplier and item/buyer performance reports. Can
be integrated with inventory and supplier, item, and buyer performance
reports; accounting; Material Request Bid, and accounts payable. Optional
Buyer Workstation PC available. Provides Windows GUI and client/server
architecture. Tel: (404) 264-5430.
American Tech. P.O. WRITER PLUS is a full-function purchasing system
designed for use on PCs and local area networks (LANs). This system

contains 14 modules: Purchasing Module (with PO create, history, and summary report capabilities); Receiving Module (with receipt transaction recording/history and open order status); Supplier Performance Module (which rates delivery, price, quality, and overall supplier performance); Inventory Control Module (with inventory status, usage history, and automatic reorder analysis); and an Accounts Payable Interface Module that allows three-way matching of PO, receipt, and invoice. Other P.O. WRITER PLUS modules include FAX/EDI, Data Interface Utility, Purchase Requisitioning, Stock Requisitioning, Bar Code Interface, Ad Hoc Reporting, and Equipment & Service Tracking (EAST). P.O. WRITER PLUS for DOS requires a 286-based PC with 640K. P.O. WRITER PLUS for WINDOWS requires a 486-based PC with 8MB RAM. Microsoft Windows compatible. System can be implemented in modules or as a complete system. Single or multi-user versions of the software are available. Tel: (908) 946-8844; Fax: (908) 946-3102.

Advanced Procurement Systems (APS) is a PC-based (single-user or network) modular system that includes the NIGP 5-Digit Commodity/Service Code. APS's Purchasing modules automate all aspects of vendor management, requisitions, RFQs, bid response tracking, bid evaluation, POs, and management reports for both open market and contract purchasing. Departments can electronically submit requisitions and inquire status on-line. APS Stock Inventory automates all phases of inventory management. Integrated with APS purchasing, it completely automates the purchase-reorder cycle. Both Purchasing and Inventory can interface with an accounting system. Customer service is available over the phone and via modem. On-line help messages, pull-down menus, and automatic faxing are available with APS. Tel: (512) 338-0091.

Applied Micro Business Systems. STOCK-MASTER 4.0 is a micro-based comprehensive inventory management system with purchase order writing and tracking capability. Purchase orders are monitored on an individual transaction (line item) basis by item number, vendor number, PO number, due date, days overdue, manufacturing order number, and/or job number. Also included are vendor performance and procurement support modules, which maintain a database of each supplier for each item and generate user/vendor item cross-reference lists, leadtime analysis, and pricing analysis. Purchase order writing and tracking functions are fully integrated with STOCK-MASTER 4.0 inventory management system. Tel: (714) 759-0582.

Armor Systems, Inc. Armor Systems offers a comprehensive Purchase Orders module as part of its Armor Premier Accounting Software package. Purchase Orders allows users to create, change, view, or delete purchase orders and their accompanying details. The Purchase Orders module posts all data specified and transfers data to the Inventory Control module. The system will track items and purchase order status by department, supplier, or another category. It also can quickly review drop ship addresses, cash flow, and item status. The 18 fully integrated modules that can be used with Purchase Orders include Accounts Receivable, General Ledger, Payroll, Accounts Payable, Order Entry, Billing, Inventory Control, Fixed Assets,

Point of Sale, Quick Sale, Job Cost, Bank Reconciliation, Customer Information, Time Billing, Summit, and Screen Builder. A report generator is available for custom reports. Also file structure layouts are provided for programmer access to EDI capability. Premier is designed for small and medium single and multi-location operations. Software operates on IBM PS/2, AT, 386, 486 and compatibles with a hard disk drive. Tel: (407) 629-0753; Fax: (407) 629-1401.

ASK Group. MANMAN/X expands traditional MRP II functions to the business planning level. It is a complete business management system, with the added value of interacting with corporate business systems as well as Manufacturing Execution Systems (MES) on the shop floor. MAN-MAN/X offers a comprehensive scope of planning, forecasting, costing, engineering, project management, inventory management, production, sales, purchasing, and service and maintenance capabilities. ASK MANMAN/X is built on an open, modular architecture that allows customers to select the hardware, database, and user interface environment they need.

Beacon Expert Systems, Inc. Negotiator Pro for Purchasing is a 21-clause Master Purchasing Agreement that creates a standardized framework for the buyer and seller, quantifying the good will, basic acceptance, and performance expectations of the parties. The agreement provides a complete valid contract, yet simplifies much of the unnecessary jargon and complexity of some contracts. It contains selected UCC references. Additionally, NPro for Purchasing has all the benefits of the original Negotiator Pro, including structured planning and preparation templates; personality and negotiating style profiling capabilities that give greater insight into possible outcomes of your negotiation; and hypertext glossary of definitions, key concepts, and tactics. Tel: (800) 448-3308; Fax: (617) 734-3308.

Bellwether Software Corp. Purchasing Management Extra (PMX-2) is a full-function purchasing system for PCs and PC networks. It is available for DOS, Windows, OS/2, and UNIX. PMX-2 includes the following modules: 1. PURCHASING (with supplier management, PO generation, PO history, and management reports); 2. RECEIVING (with receipt entry, open/overdue order tracking, and supplier performance ratings); 3. REQUISITIONS (with requisition entry and automatic conversion to purchase orders); 4. INVENTORY (with inventory balances tracked at multiple inventory warehouse locations); 5. REQUEST FOR QUOTATIONS (with RFQ generation for selected suppliers, suppliers bid entry, and conversion of successful suppliers' RFQ to a purchase order); 6. ACCOUNTS PAYABLE INTERFACE (with on-line matching of invoice to the PO and receipts, and transfer of "matched" invoices to our A/P system for payment); 7. FAX (with POs and RFQs faxed directly to the supplier's fax machine. PMX-2 can be implemented in modules or as a complete system. An optional ad hoc Report Writer is available for custom reports and inquiries, and an Import/Export utility allows transfer of data to and from any mainframe, mini, or PC. Tel: (502) 423-8963; Fax: (502) 426-5463.

CACI. SACONC-FEDERAL uses interactive menu-driven prompts to assist buyers and contract specialists in requirements analysis, source identification, solicitation preparation, bid evaluation, contract award administration, and closeout. Product prepares solicitation, amendments, award modification documents; tracks purchase requests; accepts customer status requests, cancellation requests, and stock number changes; maintains purchase price vendor histories, ship-to addresses, item records, and purchase requests records. Fax: (703) 528-2215.

CallComputeComm Systems. Dial and Deliver program allows buyers to obtain supplier Work in Progress (W.I.P.) status on parts or complex end items to monitor and resolve production schedule issues. The supplier makes a phone call and is prompted to directly input W.I.P. quantities and Promise Dates using the phone touchtone keypad (a rotary phone capability is also provided). No modem is required. The buyer can access the analyzed information from the program using the phone and touchtone commands to select either voice or faxback reports. Remote fax number can be specified at the time of the call; cellular phones can be used as well. The status information provides: Delivery quantity, Returned quantity, W.I.P quantity at each milestone, and Promise Dates. The analysis provides: line of balance quantity variation at each milestone, a 30-day view of the schedule quantity increase at each milestone, Comparison of the supplier's Promise Date status against the leadtime, and Identification of errors in W.I.P reporting. Tel: (519) 273-6413; Fax: (519) 273-6452.

Charleston Financial Services, Inc. PURCHASING AT A GLANCE is designed to track and distribute office supplies and capital purchases from a central in-house location, available in both PC and LAN versions. The supplier database contains all the necessary supplier information to generate quotations and purchase orders. Special supplier reports review supplier performance, provide department and company-wide supplier lists, and mailing labels. Stock control functions focus primarily on current data for the tracking of expendable and capital-expense items. Special features include a monthly usage bar graph and automatic reordering based on reorder points, virtually eliminating reorder lag time. Other reports include: on-hand, on-order, back-order, reorder, and master supply lists; department notification letters; and purchase/supply catalogs. All invoice information is entered into the Log-In database, with a look-up screen provided to assist with input by selecting items on order. On-hand stock reports provide detailed information for all items received. Department-generated requisitions are entered into the requisition database for office supplies and capital-budget items. During the requisition process, PURCHASING AT A GLANCE can place items on back order; track and trace orders; add new items to the stock catalog; generate delivery slips; and process returns. Purchase orders can be viewed, printed or faxed. Prices quoted are compared to prices billed, and reports provide accurate tracking of what has been ordered for whom, and when it will arrive. Tel: (800) 792-7224.

Cincom Systems, Inc.. The Purchasing (PUR) system manages all

purchasing from requisition through receiving. The Purchasing system provides control, access to shared information, and integration with manufacturing and accounts payable, while minimizing clerical effort. The Purchasing system is a primary component of CONTROL Manufacturing. Major facilities include purchased item definition, vendor definition and sourcing, requisition and purchase order management, receiving control, invoice matching, and vendor analysis. Runs on HP-UX, IBM 43XX, 30XX, full DEC VAX family. Tel: (513) 662-2300; Fax: (513) 481-8332.

C.R. Smolin Inc. E-Z-MRP is a self-teaching, self-installing, entry-level, micro-based MRP system designed for small manufacturers. The program provides detailed schedules of component requirements. Its zero-inventory, daily bucket, lot-for-lot approach allows purchasing managers to establish JIT relationships with their suppliers. Its speed of calculation allows MRP to be run as often as replanning requires. Its ability to support multiple databases give planners and schedulers the ability to do "what if" analyses without disrupting the production database. E-Z-MRP is easily interfaced to other purchasing modules. It captures all inventory transactions in a disk file audit trail allowing the user to generate purchase price variance reports, do lot and serial number tracking, and generate shipping and receiving reports. Including its full-featured bill of materials processor, and its 32,000 part number capacity, the complete system sells for $3,290. E-Z-MRP Jr., which is restricted to 500 part numbers, is only $980. A multi-user file locking version compatible with all networks is also available. Additional modules provide Capacity Requirements Planning, Labor Distribution and Job Costing, Physical Inventory, and Purchasing. Product literature and working demo available at Tel: (619) 454-3404; Fax: (619) 454-3453.

Command Line's CLC-PM4 Purchasing Management System is now available with client-server capability. The multi-user customizable PC-based purchasing system provides extensive on-screen and printed history of interactive transactions by material, vendor, PO, and receiver. It handles contracts, MRO, plant, R&D, and capital purchases with EOQs, canned comments, and free-form text for blankets, releases, change orders, rejections, cancellations, RFQs, and purchasing requisitions. Vendor performance analysis, on-screen bid analysis, electronic budget approvals, and invoice matching are available, as well as traceability, bar coding, and EDI capability. The system keeps track of inventories and/or usage at one site or simultaneously at multiple warehouses and divisions. It interfaces with accounting and mainframe computers. The CLC System operates on any local or wide area network including Novell, DEC Pathworks, Banyan, IBM, and others. Tel: (908) 738-6500.

Commerce Software. Purchase SQL is a Microsoft 3.1 application incorporating client/server technology including ANSI/ISO Standard SQL Relational Database technology. The system completely automates the purchasing process. Designed to support several business departments, the product delivers data to different user groups by incorporating workflow

technology. Primary modules include the Buyer Module which tracks incoming requisitions, sourcing of suppliers, creating RFQs, and reordering supplier responses. The program maintains an Electric Parts Catalog which contains complete part history and part number changes including alternate, superseded, or complete changes in part numbers. The systems offers a supplier selection window and automated Purchase Order section. Purchase Order data is routed to a full-featured Receiving Module which facilitates receipt and inspection of incoming material at the line item level. For companies that purchase items for resale, the system also supports the sales department by offering a Customer Quotation, Order Acknowledgement, and Invoicing module. The system is designed with an "Intelligent Graphical User Interface" which reduces new user training time. Features include On-Line HyperText of the complete 170-page User Manual and "mouse-activated" contact sensitive help. Additional modules: Image Processing which enable users to store images, pictures, diagrams, test reports, by part number listed in the Electronic Parts Catalog. Tel: (800) 447-7172; Fax: (914) 592-2109.

Data Management Concepts. Purchase Pro 2 is a full-featured purchasing software package intended to support buyers in small and medium sized companies with mainframe quality purchasing capabilities. The system provides capabilities in requisitioning, purchasing/receiving, and quotations/supplier responses. It is designed for PCs operating in Microsoft Windows for Workgroups network environment. The software supports the creation, printing, and faxing of purchase orders and RFQs. Purchase Pro 2 supports multiple line-item requisitions and requisition tracking. Item master files define parts completely with both company and manufacturer's part numbers. Supplier master files define suppliers and provide supplier notebook text, line card, and contact names. Consistent header and line-item data entry using ADD/EDIT/DELETE buttons makes entering purchase orders and RFQs easy. Purchase Pro 2 supports multi-company/site/division purchasing. It supports no charge, advise price, progress payment, and blanket orders as well as government contract and priority rating orders. Change order documentation and control is provided automatically without buyer input. Multi-line item receivers record incoming materials and support payment of invoices. Rejects and supplier returns are documented. Functional and transactional security is fully provided. Multiple supplier RFQs are entered easily. RFQ responses are evaluated in one window with low bidders highlighted. A standard set of batch reports fully supports the management of the purchasing function. Software is licensed by the number of concurrent users while the total number of users or terminals is not restricted. Price: $2,995 per concurrent user. Requires a 386- or 486-based system with 4MB RAM, hard drive, SVGA, fax modem, Windows for Workgroups 3.11. Tel: (412) 833-3160; Fax: (412) 833-3162.

Dun & Bradstreet Software. The DBS Purchasing Systems are part of an integrated materials management solution which consists of inventory,

purchasing, and accounts payable modules. The Purchasing System is an on-line, real-time system that automates the entire procurement cycle from processing purchase requisitions through quotation, purchase order generation, receiving, and inspection. Invoice payment authorizations are processed via integration with the Accounts Payable System. The System is designed to accommodate the needs of a variety of industries and offers advanced features such as EDI interfaces, supplier analysis and evaluation, real-time PO printing, and user-defined ad hoc reporting capabilities. Tel: (404) 239-INFO.

Dynamic Software. QPII is a purchasing and inventory control system. It runs under DOS, Windows, and most LAN operating systems and is portable to most versions of UNIX, VAX/VMS and BTOS/CTOS. QPII can provide on-line access to multiple RDBMSs and file servers: Netware SQL, Sybase, Oracle, Informix, Rdb, RMS, Btrieve, C-ISAM, ctree, and others. QPII helps manage the entire purchasing cycle from requisition entry through receiving and invoice matching or AP interface. Requisitions may be entered directly into QPII by end users or entered centrally in the Purchasing department. QPII sorts all open requisitions by item so buyers may select suppliers, current pricing, and lead-times from QPII's on-line data files. It will automatically generate RFQs for any requisitioned items that do not have current pricing information and send them to as many vendors as desired. QPII will automatically generate POs for all requisitioned items that have current pricing information. QPII's integrated QPFAX system can automatically fax a PO to a supplier. The program also maintains delivery schedules, and updates order status and inventory. QPII matches invoices against POs, and checks prices, quantities, and previous invoice history. QPII can interface with a variety of external accounting and financial systems. Tel: (800) 627-1218.

Falcon Software Services, Inc. The Blue Chip MRO (Maintenance Repair and Operations) Materials Management System is a comprehensive purchasing and inventory control software system. It handles stock and non-stock materials from the creation of the material requisition through the process, purchase, receipt, and issue from stock. Included modules are Requisitions, RFQ, Blanket Order, Purchase Order, Store Room Control, Tool Kitting, Bill of Materials, Receiving, Job Costing, and more. All screens are menu-driven using single keystrokes to navigate from module to module. Each screen features integrated instructions to provide instant on-screen help. Many reports, including PO Status, PO Expediting, Stock Status, Low Inventory Level Alert and others, are standard as well as an optional report generator for ad hoc queries. Other options include direct facsimile transmission, bar coding, EDI interfaces, customized purchase order formats, and custom interfaces to Maintenance Management Systems. Custom programming, system integration, training, and consulting services are also available. Tel: (502) 443-2446; Fax: (502) 444-0617.

Hummingbird Software Corp. Free-FORM is a material catalog description conversion and cross-referencing tool. It allows companies to track

inventory or identify duplicate inventory items. It features standard, reusable templates to describe materials which allow for more accurate comparison and match. It adds items to the standardized description database, identifies duplicate items or items with missing values, searches for single items, or all matching items. Free-FORM builds cross-reference databases linking standardized descriptions to those of the suppliers, trading partners, or an industry common database. It is accessible by other MS Windows-based applications using DDE (Dynamic Data Exchange). Tel: (702) 455-4866; Fax: (702) 831-2250.

Greentree Software, Inc. Greentree's new Windows-based software, CAP 4, employs client-server architecture and is E-mail enabled, allowing it to take full advantage of inherent Windows features. It employs SQL to assure maximum accessibility of data with proper security. Its integration with Delrina's Form Flow product allows purchasing departments to tailor and create company-wide workflow schemes. Modular software supports the full gamut of materials management applications, including purchasing, requisitioning, and Trading Partner solutions. Using CAPLink, Greentree's EDI network and a joint service with MIC International, all vital communication between the buyer, co-worker, plant location, and supplier is forwarded automatically and can be acted upon long before comparable paperwork is even begun. Tel: (212) 687-0776.

INFORMS. The Advanced Government Purchasing System (AGPS) is the solution that fulfills the purchasing needs for approximately one-fifth of the state governments. AGPS has been refined/enhanced and has migrated to state agencies, city and county governments, larger school districts, colleges and universities, independent authorities, utility districts, etc. The current AGPS is a state-of-the-art purchasing system employing a graphical user interface ("widows-like") and/or text-based screens depending on the user's environment. All functions of the business process of purchasing have been automated, from initial requisition through solicitation, order generation, contract management, receiving, invoicing, and payment approval. Data is entered into the system only once. From that point the information is automatically forwarded through the entire procurement cycle. Throughout the process many functions occur automatically, such as generating bidders' lists, printing orders, three-way match, electronic approvals, bid tabulations, etc. AGPS has a multi-layers security design which is enabled by user-definable security profiles. Modular design provides for ease of implementation and tailoring for user environment. AGPS operates on IBM mainframe computers or in a UNIX environment ideally suited as a network-based system. A complete realm of consultant services, from design solutions to implementation, and training are also available. Tel: (205) 277-0372; Fax: (205) 277-0557.

Integrated Systems, Inc. The TOPAZ Series is an integrated set of software modules designed to automate the procurement cycle. It includes purchase requisitioning with flexible routing and on-line approvals, comprehensive buyer processing of requisitions and purchase orders,

receiving, storeroom issues and inventory control, on-line catalogs, and user chargeback reporting. Optional systems include request for quotation, accounts payable, barcoding, and EDI. TOPAZ'S primary focus is to reduce or eliminate paper flow while maximizing efficiency, simplicity, and security. TOPAZ is designed for distributed environments in medium to large scale organizations in areas such as administration and service. TOPAZ is a fully interactive, multi-user, multi-location system. It incorporates advanced features such as automated E-mail to keep users totally informed and pop-up windows during data entry to simplify usage. Full audit capability and historical data retention are also provided. Inventory processing includes real-time allocation, multiple costing methods, full physical inventory subsystem, cycle counting, automatic re-order, and inventory analysis. Hardcopy reports and on-line inquires are standard in each module. TOPAZ operates on DEC VAX/VMS systems and on LAN PCs using Windows 3.1 or higher. Customization and training services are available. Tel: (201) 884-0892; Fax: (201) 884-8963.

Kehlbeck & Associates. PIC PURCHASING INFORMATION CENTER is a PC-based standard purchasing program that can be modified to meet your requirements. PIC takes everything a buyer has on his desk, in his desk, and in a file cabinet and stores it for instant access. PIC consists of eight modules. Sic modules are interactive. One is for the SUPPLIER INFORMATION, which provides all pertinent information on a supplier. It can sort product offered by supplier, product description, commodity code, or part number. The second module is a SUPPLIER DIRECTORY that provides a complete listing of all suppliers in your database. A third module is PURCHASE ORDERS. You can issue, print, change, review, clone, and list all your POs. Indefinite memo fields included with each line item. The fourth module is for RECEIVING MATERIAL. You can receive individual items on a PO, receive complete and close a PO, and print receivers. The fifth module is MATERIAL ANALYSIS. You can generate overdue, expedite, project summary, part number analysis, cash requirements, and supplier summary reports. The sixth module is a UTILITIES module that provides you with the capability to archive or retrieve old POs, and add, delete, or change the program's commodity code. Two are stand-alone. One is for BUSINESS CARDS and the second for frequently used TELEPHONE/FAX numbers. The selling price for the complete program as a stand-alone is $695. For the LAN version, $1,695. Program runs on IBM PC or compatible. For a free demonstration diskette: Tel: (502) 228-3636; Fax: (502) 228-6086.

Lawson Software. Purchase Order provides companies and organizations with an easy-to-use system designed to assist users in the management and control of procurements. Extensive accounting controls are provided to manage the printing, processing, and matching of purchase orders, receipts, and supplier invoices. Ease of purchase order entry is provided with the use of blanket orders, standard orders, a mimic function, and standard comments. A purchase order can have multiple ship-to locations, multiple

delivery dates, and multiple distributions. Control is provided with user-defined buyer limits, quantity and/or dollar receiving and invoicing limits, and four-way matching. Receiving will handle serial numbers, lot numbers, inspections, reject/dispositions, and freight allocations. Handles multi-currency, language translation, and multiple tax options (VAT, GST, PST). Tel: (800) 477-1357; Fax: (612) 379-7141.

Loren Data Corp. A software development and service bureau, Loren Data Corp. has created a PC-based electronic solicitation system known as the National Purchasing System (NPS). It is used by various governmental and private buying agencies and their vendors to streamline the procurement process. An electronic mail design reduces the expenses of notifying all vendors of procurement opportunities at the local, state, or national level. NPS also accommodates the electronic mailing of all RFPs, RFQs, ITBs amendments and other solicitation documents. In addition, various electronic discussion forums allow buyers and vendors to explore procurement and contracting issues in an open, atmosphere. Free demonstration software is available upon request. Tel: (800) 745-6736.

LS DataNet Systems Inc. The LS Business and Manufacturing Software is a multi-user integrated software package for automation of materials and personnel management. Use the GUI-based software to manage POs, supplements, blanket orders, requisitions, approvals, vendors, quotations, stockrooms, assets, invoices, appropriations, charges, expediting, personnel, chemicals, EDI, and more. Support is available for PCs, LANs, DOS, Microsoft Windows, laser printing, Epson printing, faxing, auto-dialing, record locking, and client/server databases. Security features include passwords, authorities, and audit trails. Requires PC with 640K or memory, hard disk, and MS-DOS 3.1 or higher. License includes both DOS and Windows product and covers all users on your LAN. Tel: (716) 836-6377.

Macola Inc. Macola's Purchase Order and Receiving (P/O) package is an efficient, time-saving tool that enables buyers to analyze the quality, accuracy, and promptness for the delivery of all purchased materials. Run P/O with Macola's Accounts Payable (A/P) and Inventory Management (I/M) packages, and P/O's capabilities make it a must within both manufacturing and distribution environments. It predicts cash requirements, monitors supplier performance, and allows you to keep inventory levels low by alerting you to material shortages. EDI is also available with our P/O package to meet your purchase order needs. Works in an SCO UNIX environment. The Bar Code module not only provides flexibility with a hardware-independent solution, but also takes full advantage of inventory technology. Bar Code allow buyers to do everything from printing labels to receiving inventory to managing a full-scale bar code inventory system. Bar Code links directly into the Customer Order Processing Inventory Management, and Purchase Order and Receiving. Tel: (800) 468-0834; Fax: (614) 382-0239.

Microcomputer Specialists Inc. MISys Manufacturing System offers

integrated purchasing in its MISys Inventory module, part of the MISys Manufacturing System for small to medium-sized manufacturers. The Inventory module also offers inventory control of raw materials and resources, W.I.P., finished goods, and multi-level bills of material. You can add the MISys Scheduling module which provides work order, time-phased production scheduling, and material requirements planning (MRP). Extensive job costing and integration with ACCPAC Plus accounting, and MISys operates on all DOS/PC based systems and many networks. Tel: (800) 833-1500; Fax: (802) 457-4602.

Palmas Development Corp. PURCHASING plus+ is a full-featured purchasing and inventory control system for medium to large-sized organizations in all sectors and can be used for purchasing and controlling consumable items such as office suppliers and forms, raw materials for production, computers or heavy equipment, and even services such as shipping or maintenance. Features include electronic requisitioning/approval/routing; RFQ generation/tracking/bid tabulation; Purchase Order generation and tracking; receiving; full inventory control; bill of materials processing; invoicing; department budgets and charge tracking; supplier performance; accounts payable. Tel: (416) 784-2961; Fax: (416) 784-9411.

Purchasing Solutions. FIRST RATE is a cost-based supplier rating and evaluation system which analyzes data from the user's purchasing, quality, and receiving systems. FIRST RATE tracks each supplier's performance and compares it with other suppliers. When bid prices are entered into the system, FIRST RATE will objectively evaluate the bids based on the suppliers previous performance and recommends the supplier providing the best overall value. FIRST RATE also serves as a management tool by delineating acceptable from unacceptable suppliers, generating letters and reports, and graphs trends on individual suppliers, commodities, and your entire supplier base. FIRST RATE takes the guesswork out of purchasing decisions by quantifying the actual cost of doing busines. FIRST RATE integrates data from mainframe and PC environments and runs on a PC LAN. FIRST RATE is designed for use by mid- to large-size companies. Fax: (714) 583-9476.

Purchasing Systems Technologies, Inc. The POWER 1000 Purchasing System, Version 2, is a complete purchasing package that runs on IBM-compatible PCs and most LANs. Fourth generational database technology allows for total system flexibility and easy system modification. POWER 1000 includes all functions from requisition to receipt, for both stock and non-stock items, as well as blanket POs, complete buy history, inventory control, RFQ generation, quote tracking, expediting, sourcing, and a complete ad hoc report generation system. New functions for Version 2 include Best Buy, the Expedite Workbench, quote analysis, and ISO 9000 compliant supplier performance rating. POWER 1000's MRP reporting system and products file are designed to aid the buyer in predicting inventory needs and quantities. POWER 1000's Note Pad allows the buyer to track

unrelated, supplier-specific, or data-specific notes, and generate tickle lists. The P-Mail function is an internal E-Mail system that can also be integrated into processes and functions. POWER 1000 is also compatible with the Thomas Register CD-ROM for comprehensive sourcing. An extensive help system, numerous indexes, and pop-ups make the system easy to learn and use. POWER 1000 offers extensive connectivity features and is compatible with EDI, FAX, bar coding, and CD-ROM technologies. PST also has available its new POWER 1000 Lite Purchasing System which offers a complete system for a much lower investment. Fax: (303) 790-2540.

Software Arts pc/MRP is a business management package containing ten integrated modules: Address, Inventory, Purchasing, Receiving, Sale, Invoicing, Bills of Materials, Stock Room, and Accounting (GL, AP, AR). Modules can be used on a stand-alone or integrated basis. pc/MRP supports all versions of DOS and can be upgraded to any of the multi-user DOS networks such as Novell, Invisible Net, or Lantastic. The program's Small Business Package can track up to 500 part numbers; the Large Business and Multi-user versions can track up to 1 billion part numbers. The Purchasing Module can enter, edit, print out POs and reports. POs can be faxed directly from your PC (requires FAX/modern card with Quick-link). Address and part number can be imported from their respective modules. Over 100 different purchasing reports can be generated, including Consolidated Ordering Requirements, All Overdue Purchase Orders, Purchase Price Variation, and Purchase History Reports. Each line item can be taxable or nontaxable, have its own due date and discount. Tel: (408) 248-6446.

Structured Computer Systems, Inc. SCS specializes in Procurement and Accounts Payable Automation solutions for large organizations. The REALITY Purchasing and Materials Management System is designed to specifically address all business requirements of more complex purchasing and materials management environments. REALITY P&MM offers user-defined approval routing schemes, real-time encumbrance accounting, bids and quotes, on-line budget checking, multi-warehouse inventory management, fixed assets, a variety of PC and mainframe-based electronic requisitioning alternatives, and complete support of EDI and fax communications with suppliers. Tel: (203) 677-0222; Fax: (203) 677-7157.

Technical Services Associates Inc. As the cornerstone of TSA's product line, the GATEWAY system provides a streamlined conventional MRO Purchasing Procedure. GATEWAY is designed to minimize paper flow, and to enhance data retrieval and information sharing. The Base system streamlines the purchasing process by handling requisitions, request for quotes, purchasing orders, vendor management, supplier catalogs, receiving and expediting, and standard reports. To further streamline the procurement process, several optional modules such as fax/EDI, Inventory, Electronic Routing of Approvals are available. GATEWAY'S expansion potential allows it to interface with other essential systems such as Accounting, Maintenance, or MRP. GATEWAY provides maximum purchasing efficiency in personal computer, network, and client/server environments. Tel: (717) 691-5691; Fax: (717)

691-5690.

Vicom Systems Co. Company's PURCHASING PRO is a stand-alone program for buyers in large or small companies. COUNCIL PRO is custom software for MULTI-LOCATION PURCHASING. Both programs are menu-driven programs specifically for buyers. Each program features extensive "how to" help screens and tutorial, complete with sample data. The programs automatically issue RFQs and POs electronically or traditionally, on the user's own forms. Includes a supplier module for electronic and/or hard copy bid proposals. Ability to import supplier data, eliminating repetitive typing. The programs include built-in comparison of bids and allocation screen for contract awards and automatic issuance of purchase orders, or annual contract/blanket order releases and status reports. It quickly sets up over 200 clear, easy-to-read forecasts, reports and statistics which can be viewed on-screen and sent to printer. Buyers can upload or download data from existing mainframe or PC systems. Effective database queries without time-consuming, expensive mainframe programming. Tel: (214) 542-6055; Fax: (214) 542-5985.

Vocam Systems. PATHWAY is an integrated solution designed to manage all outbound shipments and integrate with other members of the SHIPTRC'R logistics management software family. PATHWAY manages ground and express packages, LTL and truckload shipments from stand-alone or networked PCs. The software also identifies shipping consolidation opportunities, meets major carrier standards for documents and labels, complies with customer routing and labeling requirements, rates shipments using carrier-approved tariffs, plans shipping operations, and analyzes shipment activity. Integration capability and data services are also available. Tel: (800)-88VOCAM.

Walker Interactive Systems. Purchase Order Management is a complete and flexible purchasing, material, and accounting management solution. Purchase Order Management lets you centralize or decentralize the procesing of requisitions, purchase orders, blanket orders, and receipts according to your organization. The software's key features include: powerful on-line buyer tools and complete management information; effective management by exception; full-function supplier material catalogs including description and key-word search; robust vendor performance analysis; multiple account distribution per PO line; extensive comment and standard instruction functionality; complete tax processing; tailorable authorization processing for all purchasing documents; comprehensive foreign-currency management; easy on-line purchase order printing; and customizable EDI interface. Purchase Order Management fully integrates with Walker Accounts Payable Management to let buyers create invoices from purchase orders automatically and help resolve matching problems on-line. Purchase Order Management also integrates with Walker's Inventory Management, and Management, Budgeting, and Accounting (General Ledger) solutions, including full-function encumbrance support. Works with most operating systems including DOS/Windows. Tel: (415) 243-2837.

... and close a PO, and print receivers. The fifth module is MATERIAL ANALYSIS. You can generate overdue, expedite, project summary, part number analysis, cash requirements, and supplier summary reports. The sixth module is a UTILITIES module that...

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